

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

RALPH CHISLETT, F.R.P.S., M.B.O.U.
Mrs. A. HAZELWOOD.
W. D. HINCKS, D.Sc., F.R.E.S.

Mrs. ELSIE M. MOREHOUSE.
W. H. PEARSALL, D.Sc., F.R.S., F.L.S.
E. W. TAYLOR, C.B.E., D.Sc., F.R.S.
H. C. VERSEY, D.Sc., F.G.S.

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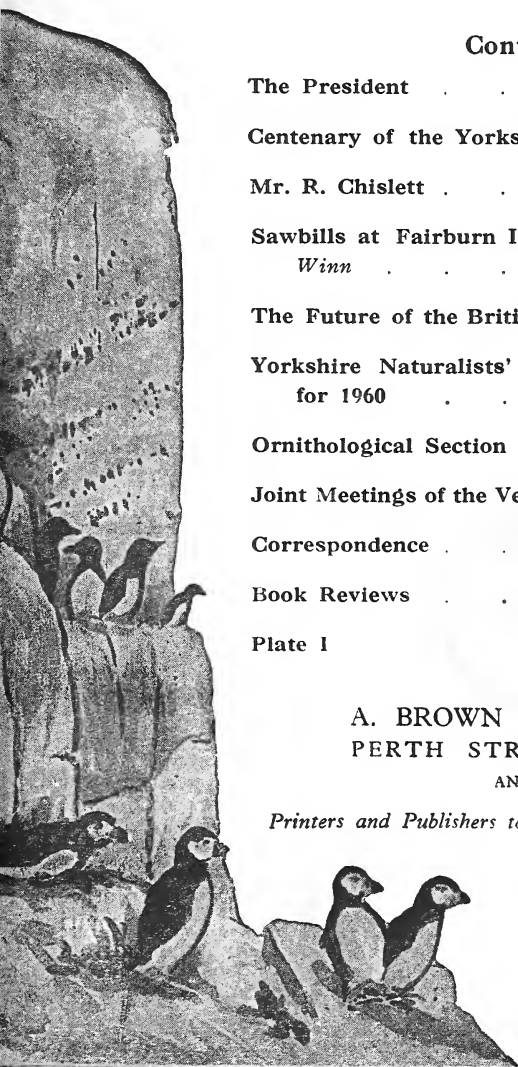
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THE BRITISH ORNITHOLOGISTS' UNION York Conference

A Meeting of the B.O.U. will be held in York from Friday evening, March 24th, to Sunday, March 26th, 1961. It will take the form of a Conference, following the Annual General Meeting, and will be at the Tempest Anderson Hall (Yorkshire Museum).

The following points will be of special interest to full members of the Yorkshire Naturalists' Union:

1. The B.O.U. invites the attendance of all full members of the Y.N.U., who are not members of the B.O.U.
2. Such members will be excused the payment of the registration fee, may bring a guest and may submit suitable papers.
3. Those wishing to attend should apply for a registration form and programme as soon as possible to the Hon. Secretary, B.O.U., York Meeting, c/o Bird Room, British Museum (Natural History), Cromwell Road, London, S.W.7.
4. Those accepting this invitation should carry their Y.N.U. Membership cards with them while attending the Conference.

E. WILFRED TAYLOR,
CLIFFORD J. SMITH,
Local Secretaries.

ENTOMOLOGICAL SECTION: COLEOPTERA AND OTHER ORDERS COMMITTEES

There will be a meeting in the Zoology Department, Leeds University, at 2-30 p.m. on Saturday, May 6th. A short paper will be read by Mr. K. G. Payne on "Insects and Flowers" and there will be an exhibition of specimens to which members are asked to contribute.

A field meeting will be held at Birkham Wood, Knaresborough on Sunday, May 7th. A bus leaves Leeds at 10-45, Wetherby at 11-23. Alight at Grimbald Bridge. The wood is half a mile upstream and members can meet at the entrance to the wood.

NOTICE.

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:

The Entomologists' Monthly Magazine.

British Birds.

Bird Notes.

Science Progress.

Essex Naturalist.

The London Naturalist.

Irish Naturalists' Journal.

Transactions of the Lincolnshire Naturalists' Union.

Transactions of the British Mycological Society.

Publish your Writing, Book Manuscripts, Fiction, Juvenile, Poetry and General, invited for early publication. Royalty and Authors' Property Agreements issued. Reasonable terms. Golden Pegasus Books Ltd. (Dept. P57), 124 New Bond St., London, W.1.

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

Plate I



Photo by]

[Elliott & Fry, London 1950

THE RT. HON. LORD HURCOMB, G.C.B., K.B.E.
President of the Yorkshire Naturalists' Union, 1961

THE NATURALIST

FOR 1961

THE PRESIDENT

THE Yorkshire Naturalists' Union warmly welcomes The Right Honourable Lord Hurcomb, G.C.B., K.B.E., as its President during the coming year. No more appropriate appointment could have been made for our Centenary Year, for Lord Hurcomb's wide interest in natural history, his deep concern both on the aesthetic and scientific levels for the preservation of scenic beauty against the encroachments of industry and town expansion, and his long and active participation in all organisations designed to safeguard the national heritage of our countryside, are reflected in his services to all those national movements concerned with wild life conservation. He is Founder President of the Council for Nature, President of the Society for the Promotion of Nature Reserves, Vice-President of the International Union for the Protection of Nature, Chairman of the Royal Society for the Protection of Birds, and Member of the Nature Conservancy. Under his distinguished leadership the Y.N.U. looks forward to an eventful centenary year.

CENTENARY OF THE YORKSHIRE NATURALISTS' UNION

'In September, 1861, a meeting was held at Heckmondwike for the purpose of founding a Naturalists' Society for that town, when the Heckmondwike naturalists were supported by about sixty others from the Huddersfield, Halifax and Wakefield Societies. At this meeting Mr. Talbot introduced the question of the advisability of more combined and organised intercourse and pointed out the mutual benefits which would accrue. He was warmly supported by others, and then on his motion it was unanimously resolved to form a Union of Societies for the purpose of holding joint meetings periodically at the various places where Societies had already been established.'

So came into existence the 'West Riding Consolidated Naturalists' Society', the name of which was changed in 1877 to the Yorkshire Naturalists' Union.

It is our intention to issue later this year a special number of *The Naturalist* in which the history and achievements of the Union and of its constituent Sections will be reviewed. Other arrangements for the year include an Exhibition Meeting to be held at Sheffield on April 29th and a Centenary Dinner to be held at Leeds University on the evening of Friday, December 1st, prior to the Annual Meeting at Wakefield on December 2nd.

MR. R. CHISLETT

At the Annual Meeting of the Yorkshire Naturalists' Union at Ilkley on December 3rd, 1960, Mr. Ralph Chislett was elected an Honorary Member in recognition of his long and devoted service to the Union.

Mr. Chislett joined the Y.N.U. in 1919 and has since been one of the most energetic and loyal supporters of the Union in general and the Ornithological Section in particular. He served as President in 1939 and no volume of *The Naturalist* over the last twenty-five years is without contributions from his pen.

Up to 1940 ornithology was included in the Vertebrate Section of the Union without any separate recognition although the predominating interest of the majority of members of the Section was ornithological. In the Annual Report for 1940 Mr. Chislett announced the formation of a separate Committee for Ornithology with the words: 'Ornithologists in Yorkshire are endeavouring to set their house in order . . . It will be the business of the Committee to see that our reports, our contributions to British Ornithology, are worthy of the County and of the Union.' Those intentions have been amply fulfilled and no one deserves more credit for their fulfilment than Mr. Chislett. He has acted continuously as editor of the ornithological report since the formation of the Committee, and the reports—which thereafter were issued separately from the Y.N.U. Annual Report—have grown steadily in size and coverage. He was also one of the founders of the Spurn Bird Observatory and has given much time and energy to its development.

Though always a vigorous champion of the Ornithological Section Mr. Chislett has throughout been concerned for the welfare of the Union as a whole. No one has been a more constant attendee at field meetings and executive meetings, a more persistent recruiter of new members or a more generous donor and friend of the Union. His election as an Honorary Member was acclaimed by all present at the Annual Meeting and it is certain that those not present will receive the news of his election with equal approval and pleasure.

SAWBILLS AT FAIRBURN INGS NATURE RESERVE

C. WINN

THE only sawbills mentioned for the Fairburn Ings area in the Y.N.U. Ornithological Reports for the years 1945-1955 inclusive are single Smews in February 1952 and 1954 and two in February and early March 1955. During the whole of the eleven years, there is not a single reference to either Goosander or Red-breasted Merganser, although the reports state that Goosanders occurred on waters other than those mentioned by name, and it is therefore possible that some birds were observed at Fairburn during this time.

Since 1956 more continuous observations have been made and more detailed records are available. Smews were again seen in each year between January and March but again the records of the other two sawbills have been surprisingly infrequent. Single Red-breasted Mergansers were seen on October 28th and December 23rd, 1956; two on January 20th, 1957, and one between November 23rd, 1958 and January 4th, 1959. The only Goosander records are of single birds on December 15th and 21st, 1957; two on December 6th and 9th, 1958, and one on March 1st, 1959.

Many observers have commented on the lack of Goosanders at Fairburn, especially since they are regular winter visitors in quite large numbers on some nearby waters, such as Eccup Reservoir.

The situation in the winter 1959-60 was quite different from the previous fifteen years. The first Goosander was recorded on November 15th, 1959, and there was an increase to five by the 20th. Only four were seen on November 23rd, but by then three Red-breasted Mergansers had turned up. All were 'brown-heads'.

Numbers fluctuated, but birds were present throughout December. They remained below double figures for the first three weeks. Two Smews were recorded on Christmas Day and the species continued to be seen up to February 1st, with three on January 16th as maximum. Numbers of sawbills on December 27th indicated an influx about that time. There were fourteen Goosanders and a Red-breasted Merganser in addition to the Smews. By December 30th there had been an increase to eighteen Goosanders and three Red-breasted Mergansers. But numbers continued to vary throughout January. There was a maximum of twenty Goosanders on January 23rd.

The last of the Red-breasted Mergansers had gone by February 7th. Twenty-one Goosanders were reported on February 14th, but only three were seen the following day and none again until February 27th. Two Smews again appeared between March 12th and 20th, during which time there were four Goosanders. One bird remained until April 7th.

A possible explanation for the unusual numbers wintering at Fairburn in 1959-60 may lie in the fact that the 1959 summer brought almost unprecedented conditions of drought over a wide area. In contrast to many of the reservoirs, the water level at Fairburn dropped only a few inches during the summer and obviously aquatic life there did not suffer as much as in the lakes and reservoirs, which became almost dry. A plentiful supply of food at Fairburn and a shortage in their usual haunts may, then, be a reason for the unusual numbers of sawbills present at Fairburn.

It may be significant, however, that all the birds at Fairburn were 'brown-heads', which may suggest that a fresh population of young birds was colonising a new wintering area. It will be interesting in this connection to see if sawbills return to Fairburn in comparable numbers in the coming winter.

It would also be of interest to know if other observers noted an increase in numbers of sawbills last winter and, if so, whether their birds were mainly 'brown-heads'. On the other hand, decreases at waters regularly used by sawbills might indicate that some of the birds from those areas had transferred to Fairburn, where food was more plentiful.

THE FUTURE OF THE BRITISH FLORA

D. H. VALENTINE
(*The Durham Colleges, University of Durham*)

Presidential Address to the Yorkshire Naturalists' Union, Ilkley, December 3rd, 1960

I SHOULD like to begin by thanking you for the honour you have done me in choosing me as your President this year. I am conscious that, as a professional botanist, I spend less time than I should in the field; but it was as a field naturalist that I first became interested in biology; and I should like to take this opportunity of acknowledging my debt to L. C. Miall, a great Yorkshire naturalist, whose books I read as a schoolboy. These books stimulated my interest in the natural history of both animals and plants, and I think that they are still among the best of their kind.

The study of natural history is one of the best forms of outdoor recreation and of high educational value; but the naturalist has also an active part to play. By observation and experiment in the field he can make valuable contributions to science; and by virtue of his special knowledge he can influence and help to control national policy on nature conservation. This is a matter of pressing importance in Britain, and I have had it very much in mind in choosing my subject today; for the future of the British Flora depends largely on active conservation.

I should like to begin by saying something about the past history of the British Flora and also its present status. The history of the British Flora should, like all good history, be based on documentary evidence; the documents in the case are the remains of plants preserved in peat bogs and lake deposits. The temporal sequence of these deposits can be worked out and dated; and with the help of knowledge of present-day plants and plant communities, we can form an intelligible picture of the sequence of plant communities since the last glaciation not only in Britain, but over the whole of Western Europe. Farther back than this our knowledge is more fragmentary, but there is no doubt that it will become steadily more complete; the full story up to the present is told in Godwin's fine book, *The History of the British Flora*.

It should be emphasised that, as with the history of man and his political institutions, the conclusions that we reach in these studies are not based purely on the documents. In human history we begin with the knowledge of man and his civilisation as they are at present and we interpret the documents in the light of this knowledge; the interpretations are not always the same and are conditioned by our prejudices. Each historian has his own point of view. It is the same with the history of the flora. The subfossil remains tell us that certain plants were present and we use this as a basis for a reconstruction of past floras. For example, certain horizons contain pine and birch pollen. Unless the observer is familiar with natural pine forests at the present time, he is not able to reconstruct the ancient forests very successfully. Thus a knowledge of present floras is essential to an interpretation of past floras; and this constitutes one important reason for the preservation of at least a part of our natural plant communities.

It may be asked why we should interest ourselves at all in the past; have we not enough pressing problems at present without digging up the past? The pursuit of knowledge for its own sake has been a feature of Western civilisation for at least 300 years; and this tradition is still alive in at least some parts of the modern world. It is not a concept which has meant much at any time to the man in the street, but it still means a great deal to scholars and naturalists. Oddly enough, many enquiries and investigations which have been quite academic to begin with have turned out to be of the greatest practical importance in the long run. Studies of the post-glacial history of the British Flora are at first sight of little practical value; but when they are linked with parallel studies of geology and archaeology, they tell us a tremendous amount about past climates; and this is highly relevant to meteorology, for example, and to the possibility of predicting and forecasting climatic changes at present.

Let us turn now to the flora of Britain as it is at present. In what ways is a knowledge of this flora interesting or important? What is happening to our flora, how has it changed in recent times and have we any way of checking or modifying these changes? In order to answer these questions we must examine in turn the different lines of investigation that are being pursued. My examples will be taken mainly from flowering plants, but I shall try to mention some other groups as well.

It is safe to say that all naturalists are interested in geographical distribution. The recording of plants and animals and their habitats is one of the most important activities of societies of naturalists; and such activities have a long history in Britain, going back to the times of John Ray. This year is, in fact, the tercentenary of what may be regarded as the first local flora, Ray's *Catalogus plantarum circa Cantabrigiam nascentium*, published in 1660. This was the forerunner of a long series of local floras, generally written by individuals, but often sponsored by local natural history societies; and it is encouraging to know that such floras are still being written. In this kind of work, there is naturally a tendency to concentrate upon rarities and to neglect the commoner plants; but the B.S.B.I. Maps Distribution Scheme, which is well known to all of you, has recently attempted to set this right. A nation-wide effort of naturalists has been made, and distribution maps of all British flowering plants are being prepared and will soon be available.

These maps are valuable in several ways. For instance, they make possible the construction of a map of the total distribution area of species, a task which depends entirely on accurate local information. With the aid of such maps we can analyse the flora of large areas, such as Europe, into geographical elements and make useful comparisons between the floras of different regions. We can also see how plants belonging to different elements may occasionally meet at the edge of their ranges. Thus the hoary rock-rose (*Helianthemum canum* (L.) Baumg.) has its northernmost stations in Britain in North England, and the mountain avens (*Dryas octopetala* L.) its southernmost (apart from Snowdonia); in Upper Teesdale they meet on the sugar limestone of Cronkley Fell. Again, we can trace the floristic changes which are constantly occurring. The British Flora is composed mainly of plants which came into Britain after the last glaciation; as conditions change some plants disappear and some new ones come in, and distribution maps with dated records can be very informative. Our great-grandfathers, if they were alive today, would notice many differences in the flora. Amongst fairly recent invaders are American plants such as the fleabane, *Erigeron canadensis* L., and the rayless mayweed, *Matricaria matricarioides* (Less.) Porter, which is possibly of Asiatic origin. They would also see that other species, such as the rose-bay willow herb, had become much more abundant, and that many cornfield weeds had become rarer, probably because of the use of cleaner seed and improved methods of agriculture. For example, Baker and Tate, in their *Flora of Northumberland and Durham*, published in 1868, say that the corncockle (*Agrostemma githago* L.) is common in cultivated fields. As recently noted by Harrison (1960), it has now almost completely disappeared from the area.

Thus careful records at regular intervals, such as appear in *The Naturalist*, are very important in keeping track of these changes and in forecasting the lines along which the flora is developing; and naturalists have two tasks here. The first is to preserve as far as possible the old, and the second is to welcome and, as far as possible, to control the new. In this matter of recording I must emphasise the importance of preserving specimens of new arrivals or of plants whose identity is uncertain. A herbarium, if stocked in this way, can be a valuable storehouse of information. It may also be important when research has shown that what was formerly recorded as one taxon is in fact an aggregate of two or more taxa. Thus, in the older floras, the common bindweed is recorded as *Convolvulus sepium* L. It is now known that this species is represented in Britain by three subspecies; the two commonest are subspecies *sepium* and subspecies *silvatica*, which are easily distinguished and which have rather different distributions. Herbarium specimens make it possible to trace their recent history.

I should like to amplify this point by referring to the intensive experimental work on European plants which is now being actively carried out in many places and especially in Britain. Investigators, working with experimental methods on special groups, are constantly springing surprises, and revealing complexity where it was not suspected. I shall illustrate this by referring to some examples which are concerned with the discovery of polyploid races of common species; the list is a long one, and I shall deal with three groups only.

First, I should like to mention the work of Manton (1950) and her colleagues on the ferns; I shall quote here only one example among many, that of *Polypodium vulgare* L., which is now known to consist of three species, diploid, tetraploid and hexaploid, which are morphologically distinguishable and have different geographical distributions. My second example is of an equally common plant, the soft grass, *Holcus mollis*, in which Jones (1958) has discovered no less than four races (tetraploid,

pentaploid, hexaploid and heptaploid), which differ little morphologically but which may have slightly different ecological requirements; the commonest race in Britain is the pentaploid. The third example is the common ox-eye daisy, *Chrysanthemum leucanthemum* L. Here Böcher and Larsen (1957) showed that both diploid and tetraploid races occurred widely in Europe, and could be morphologically distinguished; all the British material appeared to be diploid. More recently Favarger (1959) has shown that diploid, tetraploid and hexaploid races all occur in Switzerland, each in a characteristic type of habitat, and each, in his opinion, worthy of specific rank; he also records an octoploid race from North Italy and Jugoslavia. It is too early to be certain whether all British forms of this group belong to the diploid species, and further investigation is needed.

It would be easy to multiply examples; but I think I have said enough to illustrate my point. We are rash if we assume that a common species is not worth conserving; for a Linnean species may turn out to be composed of several taxa, some of them common, some of them rare and localised in specialised habitats or areas; and we then have to do all we can to conserve such areas. I might add that although my examples have been taken from vascular plants, recent work on bryophytes is beginning to reveal a similar complexity in what have been considered to be homogeneous species; and the study and conservation of our bryophyte flora, which has some unique features, is likely to be increasingly important.

I have said that the flora is changing. Is it possible to say why? There are several reasons, all of which are relevant to the general ecological factors which control our vegetation. I have already referred to changes of plant communities in post-glacial Britain and I have attributed this to climatic change. A study of the world's flora shows a general correlation between type of plant community and climate. In the lowlands of Western Europe deciduous forest is now the climax type of vegetation; that is to say, it is a stable self-regenerating type of vegetation, modified in composition by soil and location. If the climate remains more or less stable, we expect little or no change in the vegetation; but in most of lowland Europe and particularly in industrial Britain the native vegetation has been destroyed or profoundly modified. In its place we find a variety of communities such as arable land with crops, grasslands of various kinds, plantations, and moorland and heathland. Some of these communities are apparently stable, but they are not really so; they are dependent for their existence on man and his domestic animals, and they are always tending to revert to scrub and woodland. These communities contain many species which under truly natural conditions would probably not be there at all, such as the recently introduced species mentioned above, and many other species are much rarer than they otherwise would be.

This phenomenon is very striking in areas where man's interference is more recent than in Britain. A good example is provided by New Zealand, which has a rich flora of European weeds which are confined to areas influenced by man; in the undisturbed areas the native flora holds its own. Again, in Eastern Canada, one's first impression of the vegetation round the towns is that of familiar European plants and particularly the common weeds. In the countryside, where the vegetation is less disturbed, the weeds disappear. It is interesting to note that one or two European species have succeeded in becoming completely naturalised in Canada, though they are quite exceptional, for, generally speaking, the introduced species only thrive in disturbed habitats. One of these is the orchid *Epipactis helleborine* (L.) Crantz, first recorded in America in 1879, and now widespread in deciduous woodland in Eastern North America. Another is the flowering rush, *Butomus umbellatus* L. This species, first recorded in Canada in 1897, extended its area very rapidly; and by 1935, Marie-Victorin described it as the dominant monocotyledonous plant of the fresh waters of the Montreal area, competing with and often replacing the native hydrophytes. He compares it very aptly with the Canadian water-weed, *Elodea canadensis* Michx., which made a similar conquest of European fresh-water habitats when it was first introduced a hundred years ago. In Britain, too, such species rarely become completely naturalised. Two examples, besides *Elodea*, which perhaps come into this class, are the balsam, *Impatiens glandulifera* Royle, and the willow-herb, *Epilobium nerterioides* Cunn.

Another interesting consequence of man's action on vegetation has been pointed out by Anderson (1949). Plant communities often have fairly sharp boundaries, with only a narrow transition zone; and each community often has its own characteristic species, restricted by habitat preference to its own community. If the

communities are destroyed or modified by outside interference, the boundary may become blurred, and a zone of new habitats, differing from the original ones, may be established. In such habitats, species which were formerly isolated from one another may meet, and have opportunities for hybridisation; and this may eventually lead to a considerable modification of the characters of the species concerned. A good example is provided by the red and white campions (*Silene dioica* (L.) Clairv. and *S. alba* (Mill.) Krause), investigated by Baker (1948). The red campion is native in British woodland whereas the white campion has probably been introduced by man as a weed of cultivation. As woodland is destroyed, intermediate scrub and hedge habitats are formed in which the species meet and hybridise. This process may eventually give rise, if not to new species, at least to a modified form of one of the parents which is probably better adapted to the new 'hybrid' environment than either of the parents. Baker has in fact shown that some successful white campion populations do show traces of their contact with the red campion. Anderson has called the process introgressive hybridisation, and he suggests that it has probably been of considerable importance in the modification and evolution of floras which have been influenced by man, and especially the weeds.

I should like at this point to say something about three species of *Primula* which have interested me for many years and in which interspecific hybridisation and its effect on natural populations has been investigated; these are the primrose, the oxlip and the cowslip. Of these, the oxlip, *P. elatior* (L.) Hill, is probably the least familiar to you; in its typical form (subsp. *elatior*), it is a plant of western and central Europe, with its northern boundary in South Sweden and its north-western boundary in East Anglia. In central Europe it may occur in large quantities in moist meadows and woodland, but in Britain it is practically confined to oak-ash woodland on the chalky boulder-clay, as was first shown by Christy (1922). Christy also discovered the remarkable fact that in Britain, the oxlip and the primrose are mutually exclusive. Over the whole of the main oxlip area the primrose is absent; but round the margins of the area, the oxlip meets the primrose, and the two species often hybridise extensively. If we examine one of these marginal woodlands, we find that the two species are to some extent ecologically isolated as well, the primrose growing in the better-drained areas where dog's mercury and bluebell are most frequent, and the oxlip in the more poorly drained areas, which carry a mixed flora in which wood anemone and lesser celandine are abundant; but the boundary between the species is not sharp, and is, as it were, blurred by hybridisation. In discussing this situation some years ago (Valentine, 1948), I came to the conclusion that most of the hybrids were of the first generation and that there were relatively few hybrids of the second or further generations. A second brief survey was made recently, in which the populations were recorded in a rather different way. Flower samples from individual plants were taken over a fairly large area, which extended from the primrose zone, across the hybrid zone, to the oxlip zone. The *Primulas* are extremely abundant, and the size of the sample (112 plants) was not very large nor was the sample random; but an attempt was made to make it reasonably representative and evenly spread over the area.

Observations and measurements were made on each plant, and the data were plotted on a graph (Fig. 1), in which the co-ordinates are calyx length and corolla diameter (a single representative flower from each plant was used). The graph also records the diameter of the petals and the type of inflorescence. What may be regarded as typical oxlips and typical primroses are easily distinguished; in the former the inflorescences are pedunculate, the calyces are short, the petals are narrow and the flowers small. In the latter there is no peduncle, the calyces are long, the petals are broad and the flowers are large. In between these two is a large number of plants with intermediate characters, which may be interpreted as hybrids; and this diagnosis is confirmed from a knowledge of artificial hybrids which have been made. Such hybrids are intermediate between the parents in calyx and corolla characters, but always have a pedunculate inflorescence; and their characters are thus similar to those of the plants recorded in the middle of the graph. Part of the spread of the points on the graph may be attributed to purely phenotypic variation, as some characters, such as those of the corolla, are much affected by small differences in the environment; but the scatter shown far exceeds the limits of this kind of variation, and must be attributed to hybridisation. Some of the plants may represent F₂ or F₃ hybrids, others are probably the products of backcrossing. The number of primroses in the sample is rather small, but they form a group at the top right-hand

corner of the graph which is rather distinct from the main mass; and this probably indicates that there is relatively little backcrossing to primrose. On the other hand, it is impossible to draw a line between the putative F₁ hybrids and the oxlips, and this indicates extensive backcrossing in this direction.

Another point is worth noting. The characters used on the graph, which distinguish primrose and oxlip, are in general fairly well correlated; but as might be expected in a hybrid population, some independent segregation, leading to a breakdown of this correlation, sometimes occurs. Thus, an occasional plant has all the primrose characters plus a pedunculate inflorescence. Another plant has all the oxlip characters but abnormally broad petals; and yet another (top centre of the graph) has the calyx length of the primrose, the petal breadth of the oxlip and the corolla diameter of the F₁ hybrid.

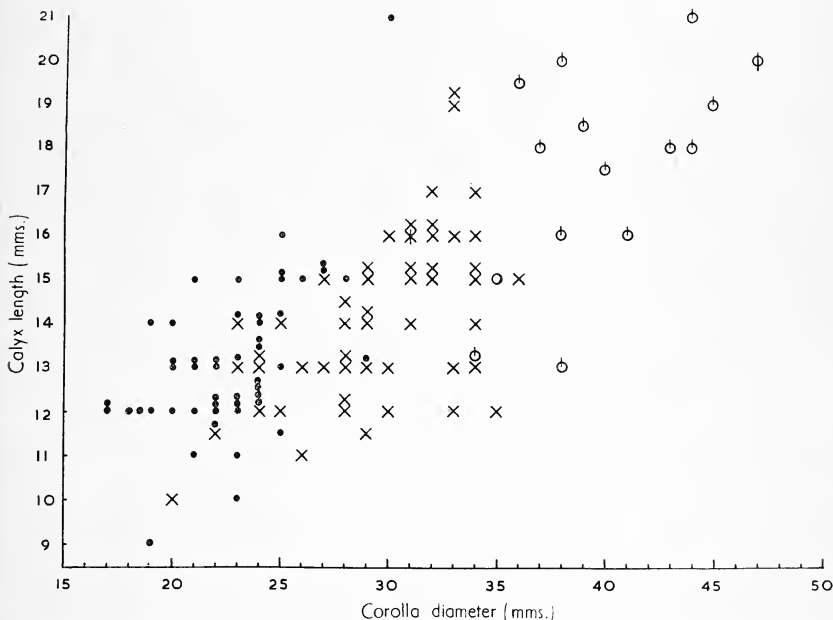


Figure 1.—The data refer to part of a single large population of the Primrose (*Primula vulgaris*), the Oxlip (*P. elatior*) and the interspecific hybrids, in an ash-oak woodland in Cambridgeshire.

Each point represents measurements made on a single plant. The three main kinds of symbol denote variation in petal-breadth, thus:

- | | | |
|---|---------------|-----------|
| • | petal-breadth | 5- 8 mm. |
| X | " " | 9-12 mm. |
| ○ | " " | 13-17 mm. |

A vertical line on the upper side of the symbol (e.g. ○) denotes that the inflorescence was non-pedunculate (as in the typical primrose). Vertical lines both above and below the symbol (e.g. ◊) denote that the plant carried both pedunculate and non-pedunculate inflorescences.

It would thus appear that hybridisation is more extensive than the 1948 records would suggest. This may be due to insufficiently accurate recording in the previous survey; on the other hand it is possible that hybridisation has become more extensive during the last twelve years. At any rate, at present, introgression is certainly occurring; but the eventual fate of this and similar populations, of which there are many, is still uncertain. As was pointed out in the earlier discussion, the rate at which hybridisation occurs, and the fate of the hybrids, are conditioned by the environment; and the environment is affected by the system of woodland management. These woods, in which the main shrub layer is of hazel, are regularly coppiced on a rotation system. This means that every fifteen years or so, the hazels in a particular area are cut down to the ground, and are then allowed slowly to grow up again. The conditions on the woodland floor, and especially the light intensity, will thus vary greatly and in a regular way; and this almost certainly affects both the

flowering and fruiting of the Primulas. Though in some years numerous seedlings may be observed, in other years seed-set and seedling establishment are slight; and many of the adult plants in the population are obviously old and form large clones. This suggests that the rate of turnover in the population may not be very great, and much under the influence of the management system. If coppicing were to cease, and the wood allowed to revert to its natural condition, it is possible that the proportion of hybrids in the population would decrease; and the high frequency of hybrids may thus be due, at least in part, to human interference.

Time does not allow more than a brief reference to the hybrids in which the cowslip is involved. The cowslip-oxlip hybrid is very rare, mainly because of the strong internal barriers to hybridisation which are known to exist; but the cowslip-primrose hybrid is, of course, quite common, and is often, and confusingly, called oxlip.

The factors which isolate the primrose and the cowslip in Britain are of several kinds. First, their flowering-times are different, though they overlap a good deal; secondly they tend to occupy rather different kinds of habitat, although the habitat differences vary from one part of the country to another and have never been adequately analysed. Thirdly, the seed-set and germination from hybrid pollinations are low; and fourthly, the hybrids have a fertility of only about one-third that of the parents. The first three of these factors will tend to reduce the frequency of hybrid formation, while the fourth will affect the ability of the hybrids to produce offspring.

Populations in which the hybrid is relatively frequent have been examined over a considerable area, particularly in the north of England, by Clifford (1958), in order to see whether there is any extensive back-crossing of the type just demonstrated in the primrose-oxlip populations; but very little evidence of this could be found (although back-cross hybrids can easily be made artificially). It was concluded that most of the cowslip-primrose hybrids observed in nature are in fact first-generation hybrids, and that they produce very little offspring. It is possible that further observations may lead to the modification of this conclusion; but the point I want to make is that both the primrose-oxlip and the primrose-cowslip populations are in a state of flux. They are exposed to environments which are constantly changing under the influence of man, and this will affect their composition and the extent of hybridisation, so that further changes may be expected to occur. These Primulas, and the campions, are only two of many examples that could be quoted. In many other genera, the breakdown of ecological and geographical isolating barriers has led to extensive hybridisation, the results of which have in many cases yet to be analysed. The genera *Epilobium* and *Salix* provide examples of groups on which comparatively little work of this kind has been done, and which need investigation.

I have spoken of changes in the community and of the floristic changes which may follow. Of the latter we have a fairly good record but for the former the information is still not adequate. Ecology is a much younger science than systematics, and by the time it had been developed much of our lowland vegetation had been greatly modified; and although, thanks to Tansley and his successors, we have good accounts of most types of British vegetation, these are not entirely satisfactory either in form or scope. In other parts of Europe, students of phytosociology have produced accounts of vegetation in a definite form, with a definite nomenclature and system of classification. British ecologists have generally been in disagreement, probably rightly, with the system of classification and with the nomenclature; but the neglect of the system has carried with it the neglect of systematic discussion. We have no easy means at present of comparing British and European types of vegetation, nor have many of our minor communities been described at all. This applies particularly to highly artificial communities such as those of arable fields, meadows and the like. The publications of European ecologists such as Ellenberg (1956) show how informative and interesting a precise study of weedy communities can be, and indeed how useful they can be to agriculturalists and to those concerned with problems of land use.

It is encouraging to note that a fresh start has been made in this line of work in Britain, particularly in the description of Scottish mountain communities by Poore and McVean (1957). The task is not an easy one; not only does it require much experience to produce satisfactory descriptions, but there is also, unfortunately, still much disagreement about methods. I can illustrate this point by referring to the very valuable Biological Flora of the British Isles, which consists of accounts of the ecology of individual species, published from time to time in the *Journal of Ecology*. Such accounts generally include descriptions and tabulations of the communities in

which the species occur; and in looking through recent issues, it was noted that three different methods of description were in use. No settled method has yet been generally adopted. Nevertheless, it is worth considering whether a survey of the plant communities of Yorkshire might be put in hand by the Yorkshire Naturalists' Union as a long-term project. Apart from its intrinsic scientific interest, this project could accomplish useful tasks in practical agriculture and especially in the field of conservation. As I pointed out above, it is important to conserve a representative range of types of community; and a survey such as I have suggested, if it could be organised, would give some idea of the quantity and frequency of community types and would provide a basis for well-considered selection.

Another way in which accurate ecological information can be of value is in the conservation of individual species. As you will know, a knowledge of the ecological preferences of plants is important in spotting them in the field and in discovering new localities. This principle has recently found an interesting application in the case of *Viola rupestris* Schmidt, a violet with a wide distribution in Europe and Asia, but hitherto known in this country only from a single small area on Widdy Bank Fell in Upper Teesdale, where it occurs in limestone grassland on south-west-facing slopes where the vegetation is open. Following up a clue from a herbarium specimen at Kew, Mr. M. J. Harvey and I looked this year for this species in the limestone areas of Arnside in Westmorland; and we were fortunate enough to find a small colony of the plant growing in just the kind of habitat expected, an open limestone slope with a southern exposure. Mr. Harvey has since found another locality, again in a similar habitat, on Long Fell in Westmorland, about seven miles from the Teesdale locality. It seems quite likely that this violet may eventually turn up in Yorkshire, and it should certainly be looked for. I referred earlier to the conservation of common species; the case for the conservation of rare species is generally, though not always, conceded. It is sometimes argued that rare species are merely collectors' items, and if they vanish from Britain, they can equally well be studied in other parts of their range; but this is not true. With *Viola rupestris*, for example, important differences in flower colour and habit between the Teesdale and Arnside populations have already been discovered, and some of their characters may be unique. In investigating the history of this and similar species in the British Flora, it is essential to study the living plants and their habitats, and their conservation is thus a matter of scientific importance.

I hope that the examples I have given will have shown you some of the ways in which the British flora is changing, and some of the reasons for attempting to control these changes. If we are looking to the future, it is clearly important to consider not only what parts of the flora (and vegetation) are worth conserving, but also how this should be done; and this second problem is by no means a simple one. It is not sufficient to say that we should leave certain areas undisturbed in a natural condition, for, as I have already pointed out, very few areas of lowland Britain are in fact in a natural condition; all have been more or less modified. Hence, if we leave them alone, they will change; an area of grassland from which the grazing animals have been eliminated will become colonised by shrubs and will eventually become woodland; and the grassland flora, which we may wish to conserve, will be eliminated. Thus effective conservation implies effective management, and this in turn often implies ecological research, so that the best method of management can be worked out. An example of the kind of action required, referred to in recent Nature Conservancy reports, is found at Wood Walton Fen in Huntingdonshire. This is one of the earliest reserves, established in 1910, and now leased, by the Society for the Promotion of Nature Reserves, to the Conservancy. Originally it was an area of open fenland with a rich flora and fauna, but during the last fifty years, it has become much drier and the herbaceous fen vegetation has been largely replaced, in the natural course of succession, by bushes. Recently an ecological survey has been made, and a management plan drawn up, designed to raise and maintain a high water-table in the reserve, and to remove the bushes so that the original fen vegetation can re-establish itself. This plan is meeting with a good deal of success, and even in the very dry summer of 1959, the fen peat retained much of its moisture and the vegetation appeared to be little affected by drought. Some of the rarer plants and animals are also beginning to increase in frequency. One of these, in which I am particularly interested, is the fen violet, *Viola stagnina* Kit., which is now flourishing in peaty depressions left by the removal of bushes. This rare violet is also known from Bawtry on the Nottinghamshire side of the county boundary, and from Thorne

Moor, some 10 miles north-east of Doncaster, where it probably still survives in a relic of the fen vegetation (Sledge, 1943).

I have said nothing here about conservation outside Britain, though the question is becoming increasingly important in every part of the world; but in our small islands, with their high population density, the exploitation of natural resources is particularly intense and the problems of conservation particularly complex and pressing. Everywhere, land is needed for houses, factories and roads, for aerodromes and power stations. In addition a mobile population, with a high standard of living, is making new demands on amenities and on facilities for holiday resorts and camps. Increasing requirements for water, both for domestic and industrial consumption, also present difficult problems. Some of you may have heard of a recent scheme, fortunately now in abeyance, to construct a large reservoir in Upper Teesdale, a scheme which would have seriously affected the unique flora of that area.

Many groups, societies and agencies have done and are doing good work in the cause of conservation, and it is impossible to mention here more than a few of these. All of you will know of the Yorkshire Naturalists' Trust, a leading representative of the many County Trusts now being organised. The Yorkshire Trust has been active in purchasing, maintaining or guarding areas of special interest, as, for example, Askham Bog, and it is encouraging to read in their annual report (1959) that a management plan for the bog is now being drawn up. Recently, a Council for Nature has been set up, a national body which will attempt to represent all amateur natural history interests; this is already proving very helpful to local naturalists and the Trusts. Finally I must mention the Nature Conservancy, instituted as a Government department in 1949, which has a permanent professional staff, and which has amongst its tasks the establishment and management of nature reserves, and the provision of scientific advice on the conservation and control of the natural flora and fauna. The work that is done by the Conservancy is summarised every year in its annual reports, to which I have already referred, and it makes an impressive showing. Thus, during the decade 1949-59, it has secured some seventy National Nature Reserves, embracing over 130,000 acres; and it has initiated and stimulated a great deal of valuable research. Nevertheless, much remains to be done; and in this work, organisations such as County Trusts and Natural History Societies can do a great deal to help. The Conservancy is doing well; but no government agency can function effectively without support from public opinion. It is in forming and informing this public opinion that naturalists can fulfil one of their most important functions.

I am grateful to the Director of the Cambridge Botanic Garden for permission to visit the University Nature Reserve at Buff Wood, Cambridgeshire.

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THE YORKSHIRE NATURALISTS' UNION: NINETY-NINTH ANNUAL REPORT

The Ninety-eighth Annual Meeting was held on December 5th, 1959, at the University, Hull, by invitation of the Hull Scientific and Field Naturalists' Club and by kind permission of the Vice-Chancellor of Hull University.

The Presidential Address entitled 'The Crane-flies of Malham Tarn' was delivered by H. Henson, D.Sc., Ph.D., F.R.E.S.

The Presidency for 1961 has been offered to and accepted by The Rt. Hon. Lord Hurcomb, G.C.B., K.B.E.

The Excursions in 1961 will be to:

- V.C. 61. Pocklington district, Sunday, July 2nd.
- V.C. 62. Fylingdales district, June 17th.
- V.C. 63. Gunthwaite, June 3rd.
- V.C. 64. Slaidburn district (Whitsun), May 20th-22nd.
- V.C. 65. Sedbergh, July 15th-16th.

The Union's Activities during the past year have been well maintained. Field meetings have been well attended and the experiment of substituting a Sunday for the usual Saturday meeting was sufficiently successful to justify a repetition of this arrangement next year.

A Conference of Affiliated Societies was held on April 2nd at Leeds University, about half the Affiliated Societies being represented. The history, organisation, field work, finance and publications of the Union were briefly explained by the appropriate officers and a general discussion followed and was continued after a break for tea. Many of the representatives of Affiliated Societies spoke and the general feeling seemed to be that the Union was doing good work. Some delegates seemed more concerned with criticism of *The Naturalist* than the real reason for the Conference which had been convened to consider the relationship between the Union and its Affiliated Societies and how this may best be strengthened. The opportunity for delegates to air their views on Union affairs may well have justified the holding of the Conference though a somewhat excessive insistence on one aspect of the Union's activities made it less constructively helpful than it might otherwise have been.

Apart from *The Naturalist*, other points raised and discussed were (a) the preparation of a panel of lecturers to give local Societies help in drawing up their programmes, (b) the publication of more field notes and reports of local interest, and (c) the spacing of dates and places of meetings.

The financial side of the Union's affairs has seen a marked improvement during the year largely on account of the successful outcome to a long correspondence between the Hon. Treasurer and the Inland Revenue Authorities which has resulted in the repayment of over £200, being the tax on covenanted subscriptions. The receipt of this repayment is particularly welcome at a time when additional expenditure is envisaged in connection with the arrangements for the Union's Centenary Year. The Executive is giving careful thought to these arrangements and apart from the plans specially connected with the Centenary it has decided to organise a Spring Exhibition Meeting at Sheffield on the lines of the very successful Exhibition Meeting held in Leeds in 1959. Further details of this and other arrangements for 1961 will be issued in due course.

Membership

At the time of writing, membership of the Union comprises 2 Honorary Life Members, 16 Life Members, 426 Ordinary Members, 44 Family Members, 11 Junior and Student Members, and 41 Affiliated Societies.

New Members

- Alderson, R. (Student), 4 Ellen Grove, Harrogate.
- Bailey, Miss Julia P. (Student), College of Housecraft, Ilkley (Freshw. Biol.).
- Barker, L. E., Garforth Cliff Caravan Site, Garforth, near Leeds (Orn.).

- Beal, J. T., The Grange, Leven, near Hull (Orn.).
 Beaumont, H. E. (Student), 5 Brampton Road, West Melton, near Rotherham.
 Bennett, G. R., 7 Wyton Grove, Preston Road, Hull (Orn.).
 Briand, K. R., 114 Henconner Lane, Leeds 13 (Orn.).
 Briand, Mrs. K. C. (F).
 Brooks, Miss Susan D., 3 Brooklyn, Grassington, Skipton (Bot.).
 Brooksbank, Mrs. M. L., 21 Southlands Grove, Bingley (Bot., Orn.).
 Dealtry, Mrs. E. M. (F), 1 Vicar Lane, Howden, E. Yorks.
 Devlin, C. J., 'Kirkholme', Old Denaby, near Doncaster.
 Emery, Miss S. P., The Training College, Bingley (Orn.).
 Farrand, J., 37 Stone Delf, Sheffield 10 (Orn.).
 Fewson, Miss Susan E., Stud Farm, Aldbrough, E. Yorks.
 Gaskell, A. M. (Student), Moorhouse Farm, Helperby, Yorks. (Lep.).
 Gilpin, A., F.R.P.S., 1 Claremont Villas, Clarendon Road, Leeds 2 (Orn.).
 Graham, M. W. R. de V., D.Phil. (Oxon.), Hope Dept., University Museum, Oxford (Ent.).
 Green, H. S., Westfield House, Bradley, Keighley (Orn.).
 Green, Mrs. G. M. (F).
 Hering, T. F., M.A., Ph.D., Nature Conservancy, Merlewood Research Station, Grange-over-Sands, Lancs. (Mycol.).
 Holdroyd, E. J., 'Turnstones', Honley, Huddersfield (Orn.).
 Houseman, R. B. (F), 115 Bradford Road, Otley.
 Jessop, Miss Ann (Student), College of Housecraft, Ilkley (Freshw. Biol.).
 Josephs, A. P., 10 Heathfield Close, Villa Road, Bingley (Orn.).
 Kemp, Mrs. Gwyneth S., B.Sc., 145 Westbourne Avenue, Hull.
 Lamb, Miss Jennifer M., 2 St. Johns Avenue, Wakefield.
 Leach, Miss Ann M. (F), 6 Oakdale Drive, Wrose, Shipley.
 Ness, M. H., 18 Belle Vue Street, Scarborough (Orn.).
 Norton, A. L., 63 Sandhill Oval, Alwoodley, Leeds 17 (Ent.).
 Peacock, J. A., 4 The Close, Alwoodley, Leeds 17.
 Pennock, Mrs. O. A., 'Fieldfare', Kings Road, Ilkley (Orn.).
 Pyrah, Mrs. Muriel, 3 Sheepwalk Lane, Townville, Castleford (Bot.).
 Pyrah, Mr. C. (F).
 Ramus, Mrs. Yvonne, Icefloe Kennels, Green Lane, Cookridge, Leeds 16 (Orn.).
 Robertson, Prof. N. F., Dept. of Botany, The University, Hull (Bot.).
 Rushforth, D. A., 199 Wakefield Road, Drighlington, near Bradford (Orn.).
 Rutherford, C. I., 24 Oakdale, Harrogate (Lep.).
 Schofield, Miss Sheila M., B.Sc., 1 Harrowby Crescent, Leeds 16 (Bot.).
 Scott, Derek (Student), 45 Durham Road, Bradford 8 (Orn.).
 Seaward, M. R. D., B.Sc., 56 St. Catherines Grove, Lincoln (Bryol.).
 Shaw, Sqd. Ldr. P. W., Officers Mes; , R.A.F., Church Fenton, Tadcaster (Orn.).
 Shepley, Miss Mary, Sheltercliffe, 12 Raikes Avenue, Skipton.
 Smith, Miss M. C., B.Sc., 11a South Drive, Sandal, Wakefield.
 St. Andrews University, Botany Department.
 Stott, Mrs. Mary, B.Sc., Rose Dene, Primrose Hill, Highburton, near Huddersfield.
 Summerton, J., F.R.H.S., 81 Leeds Road, Tadcaster (Ent., Bot.).
 Taylor, Miss April L., College of Housecraft, Ilkley (Freshw. Biol.).
 Townsend, F. E., Crossbeck Close, Ilkley (Orn.).
 Winn, C., 7 Henson Grove, Airedale, Castleford (Orn.).
 Wood, Miss Frances, 47 South Back Lane, Bridlington (Orn., Bot.).
 Worrin, Major C., (Retd.) T.D., F.Z.S., M.B.O.U., Whitegates, 151 Leeds Road, Harrogate (Orn.).
 Yorkshire Naturalists' Trust, The, 8 Coppergate, York.
 Young, Miss Julia A., College of Housecraft, Ilkley (Freshw. Biol.).

Deaths

We regret to report the death during the year of the following members:

Allison, L.	Roberts, E. E.
Behrens, H. J.	Shaw, Miss M. S.
Foster, H.	Taylor, Mrs. J. M.
Haigh Lumby, A.	Watson, W.
Nicholas, W. W.	

Resignations

The following have resigned:

Allison, Mrs. M.	Noble, J. W.
Burton, C. E.	Potter, R. M. C.
Good, Prof. R. D'O.	Needham, Mrs. C. W. C.
Lewis, R.	Sanders, W. J.
Dicker, Mrs. J.	Teasdill, G.
Jackson, Mrs. M.	Taylor, M. K.

New Society

Todmorden Natural History Society (Hon. Sec.: Fred Elliman, 12 Barker Street, Todmorden, Lancs.).

Change of Address

Abercrombie, Dr. R. G., c/o Mrs. Wood, 3 Watt Lane, Crosspool, Sheffield 10.
Appleyard, Mrs. J., The Lackham School of Agriculture, Laycock, near Chippenham, Wilts.

Bettison, J., 73 Barnsley Road, Sandal, Wakefield.

Carr, L., 'The Firs', Goathland, York.

Clarke, D. D., 42 Murrayfield Road, Chanterlands Avenue, Hull.

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

Fenton, J. K., Moor Cottage, Burley Woodhead, Burley, Ilkley.

Fryer, G., Elleray Cottage, Windermere, Westmorland.

Gowing, G. S., Fieldhead, Rogerfield, Keswick, Cumberland.

Green, Miss E. M., Pen Cottage, Constitution Hill, Settle.

Greenwood, A. D., B.Sc., Botany Dept., Imperial College, Prince Consort Road, London, S.W.7.

Hague, J. B., 17A Woodfield Avenue, Mexborough.

Johnson, A., 'Appletreewick', Wawne Road, Sutton-on-Hull, E. Yorks.

Johnston, Miss Vera, 15 Summersgill Square, Horsforth, near Leeds.

Kitchen, Rev. T. B., Montpellier House, Torquay.

Knight, W. J., 2 Brynteg Terrace, Bangor, Caerns.

Magee, L., 2 Cassop Grove, Acklam, Middlesbrough.

Milnes, R., 12 Elm Grove, Brow Lane, Shelf, Halifax.

Norman, Miss M. M., Flat 18, Cumberland Court, 98 Cardigan Road, Leeds 6.

Orton, P. D., Sunnybank, Burton, Wirral, Cheshire.

Potter, Mr. and Mrs. D. J. R., 251 Allerton Road, Allerton, Bradford.

Quin, P. C., 'Croft House', 51 Leylands Lane, Bradford 9.

Riley, Dr. J. L., Springwell House, Windmill Lane, Yeadon, near Leeds.

Simpson, C., 30 Red Lane, Farsley, near Leeds.

Utley, J. P., 31 South Parade, Northallerton.

Watling, R., 104 Central Drive, Middlestone Moor, near Spennymoor, Co. Durham.

Worsley, Mrs. H. M., The Pantiles, 31 Moor Lane, Strensall, York.

MAMMALS, REPTILES, AMPHIBIANS AND FISHES

Mammalia: (Mrs. E. Hazelwood): *Cheiroptera:* A colony of Pipistrelles has been located in an old mill near Worsborough Reservoir in the Barnsley area, this being one of the places where the late Arthur Whittaker worked on bats; the Noctule and Daubenton's Bats are also reported from the same area. A Long-eared Bat is reported seen on October 4th near Pontefract. A 'fairly large' bat is reported from Fairburn; it flew with a series of glides and then several wing beats. It was hawking for insects over and around orchards and the bush-covered lime-kilns. The following notes were kindly supplied by Mr. M. Johnson of Belle Vue Museum, Halifax: 'I have found only five different species near Halifax, viz.: Pipistrelle, very common, and I have netted numbers from mill-sites along the Ryburn Valley. I have started to ring this species using the official bat rings issued by the Mammal Society of the British Isles. Long-eared, I have netted odd bats near Halifax and have also found this species in the roof of a school near Scarborough and hibernating in a house-loft near Skipton. Noctule, four bats of this species use the metal bands on a woollen mill chimney as a roosting place during the summer months. I am also

trying to locate a colony at Hackness near Scarborough where I see them in flight regularly near the Everly Hotel. Leisler's, a single male was found in a holly tree at Salterhebble near Halifax on March 30th, 1957. Daubenton's, two bats were seen skimming the river Ryburn on three occasions during July, 1956, but have not been seen since. I have caught them flying over the river at Scalby near Scarborough and found one asleep in a blue-tit's nesting box on a birch tree near a stream at Langdale End near Scarborough. My most interesting bat find this year was due to the activities of a school caving club which reported seeing bats in a Yorkshire cave. On investigation I found three species of bats in the cave—Natterer's, Whiskered and Long-eared. I located two Natterer's bats which were hibernating in boreholes in the rock about a yard apart from each other and very difficult to see and have since identified a third Natterer's Bat taken from the same cave by the caving club.' If interested members with information re bats, particularly in and around Halifax area, would kindly contact Mr. Johnson, I feel sure he would be only too pleased to hear of any new localities or colonies.

Rodentia: Water Voles are recorded as fairly common around the banks of various reservoirs in the Barnsley district. Water Voles are recorded as exceedingly common near Pontefract in the Went. During two visits to Hooton Pagnell between Barnsley and Doncaster, Mr. T. T. Seago was delighted to find a Dormouse. Red Squirrels have bred again in Hardcastle Crags and Luddenden Dene. They are also reported from Deffer Wood in July. Grey Squirrels are recorded as common at Redstone in the Castleton district. No squirrels of either species have been seen 'for a few years' in the Brock-o-dale area near Pontefract although they were quite common there some ten years ago.

Lagomorpha: In the Goathland area, rabbits are increasing very rapidly and again spreading their territory. They have increased so much lately that they are causing concern to owners of allotments and gardens at Swinton near Rotherham. Near Castleford they have cropped almost every blade of grass off the slag-heaps and have uprooted many of the blackberry bushes growing there so that colonisation of the slag-heaps is being hindered. At Spurn, rabbits had increased greatly but there was another 'outbreak' of myxomatosis among them in July which has resulted in a drastic reduction. It would appear that myxomatosis is still taking its toll as an exhausted rabbit was seen near Driffield early in June, and on April 9th one in a similar advanced state was seen at West End during the Y.N.U. Bryological Meeting. Myxomatosis is also in evidence at Hubberholme.

Around Goathland, Brown Hares are so numerous and doing so much damage that farmers are treating them as vermin and shooting them whenever they can. Around Halifax, too, this species is increasing in numbers and near Castleford they are seen not only in the marshy fields but also on the slag-heaps. Five of them, alternately boxing each other in pairs and doing various other antics, were watched for some time early in February at Cherry Cob Sands. A dead Blue Hare was found in the Langsett area on April 23rd.

Insectivora: There are the usual widespread reports of mole activities and of dead hedgehogs on the roads. Common and Lesser Shrews are recorded from the Ackworth School grounds at Pontefract.

Carnivora: Stoats and weasels would appear to be widely distributed and in their usual numbers. Foxes remain common—perhaps too common—around Halifax and elsewhere. The Goathland Hunt accounted for 13½ brace during last season but in addition a number had been shot by farmers and gamekeepers. Over a hundred foxes have been shot by one man in the Barnsley area and on January 27th a fox was actually seen to be sniffing at a fish-and-chip paper in the street near Hoyland Town Hall; later it made off into some allotments. A badger was found lying at the side of the road at Crane Moor near Thurgoland, apparently killed by a car; weight about three stone. On June 8th a full-grown badger was killed in the village of Smithly within a short distance of Wombwell Main Colliery; it had been in the habit of fetching household scraps and was the first badger seen in the district within living memory. On October 19th a badger was reported as having been killed in Kexborough Wood; it appears that youths with dogs had forced it out of its sett and killed it. A badger with two cubs was seen at High Hoyland. A sett in a dell at Brock-o-dale is still dead after poisoning. An otter visited Southfield Reservoir near Goole last January. Grey and Common Seals occurred commonly off Spurn.

Ungulata: A fully-grown Fallow Deer was found wandering a mile inside the

boundary near a housing estate at Handsworth, Sheffield. Two deer seen in January by motorists wandering about Heath Common at Wakefield were thought to have escaped from the grounds of Nostell Priory. The herd of Fallow Deer in Deffer Wood is maintaining its numbers; a stag was seen in June. A shot stag was found in Kexborough Wood in October.

Cetacea: At the end of September a Lesser Rorqual was washed up on the seashore just north of Kilnsea. Dolphin and porpoise were sighted off Spurn on many occasions between April and September.

During a nature survey of a small woodland area near Ripponden by members of the Halifax Scientific Society, several small mammals were captured in box traps and in jam jars set in the ground. Those caught were Common and Lesser Shrews, Short-tailed Field Vole, Long-tailed Field Mouse and a House Mouse which was some distance from the nearest dwelling place. Water Vole and Water Shrew were seen along the stream and mole-hills were a common sight in the pastures.

Reptilia: Once again Common Lizards are reported from Langsett. Grass Snakes have been seen in the grounds of the Training College near Stainborough and at Worsborough Reservoir near Barnsley.

Amphibia: Frog spawn was first seen in the Dodworth road quarry pond near Barnsley on March 3rd and it had developed into frogs by June 16th. Toad spawn was seen in the same quarry pond on April 8th. The Common and Crested Newts are recorded from the training college grounds at Stainborough. The Smooth Newt is common by Fairburn village and in the vicinity of Newton Priory.

Pisces: A dozen Saury Pike (*Scombresox saurus*) were picked up on the shore at Staithes on January 12th having been driven ashore by rough seas. One measuring 14½ in. was picked up on the shore at Kilnsea on January 31st. A pike (*Esox lucius*) was caught in Hornsea Mere on January 30th. It measured 45 in. from nose to tail and 23½ in. round the middle and weighed 30 lb. which is just 7½ lb. under the British record. On August 24th a fish measuring 1 ft. 2 in. was found between Skipsea and Bridlington; it appeared to be a Horse Mackerel (*Caren trachurus*). Numerous trout are in the river Hull and in the mill-race of a canal at Driffield. Roach, perch, pike and common eels occur in Nostel Lake and other small ponds and lakes in the Brock-o-dale area. Roach were spawning there on March 14th.

There is a report of a Blue Shark measuring 8-10 ft. cast ashore at Hornsea on October 15th, which was kindly exhumed for check by Mr. Pashby.

In conclusion may I thank Messrs. R. Atkinson (Barnsley Naturalist and Scientific Society), Leonard Carr (Goathland), W. Wakefield (Dewsbury), R. F. Dickens (Leeds), Brian Pashby (Hull), John Cudworth (Ossett), J. R. Govett (Bramhope), R. J. Rhodes (Doncaster and District Ornithological Society), K. Hardcastle (Bradford), I. Morley and M. Johnson (Halifax), R. Chislett (Masham), R. B. and F. Houseman (Otley), and the members of the Ackworth School Naturalists' Society (Pontefract), who, by their kind co-operation, have made this report possible.

ORNITHOLOGY

Interim Report, 1960 (Ralph Chislett): The detailed Report for 1959 was published in the April *Naturalist* as hitherto, and reprinted. Copies were supplied to contributors and others.

The work entailed in sifting and keeping records for the West Riding having grown too large for one man as a spare time pursuit, we have gone over to the five Vice-Counties instead of the three Ridings as a basis for our recording. Once again I briefly describe the Vice-County regions: V.C. 61—the East Riding; V.C. 62—the eastern half of the North Riding; V.C. 63—the West Riding to the lines of the Aire, and the Leeds and Liverpool Canal; V.C. 64—the West Riding north of that line (less the north-western corner); V.C. 65—the western half of the North Riding (plus Dent Dale and the Howgill Fells). Some people are sending notes quarterly to the appropriate Recorders. The Recorder for V.C. 61, Mr. Athol J. Wallis, will write the 1960 Report, and to him I shall give any help I can, as I hope you all will.

In the case of rare events and of difficult species, it is always helpful for a Recorder to have information as soon as possible. If a Recorder wishes to see something for himself and such is possible, we should help him. The Report reaches far beyond

Yorkshire, and for it to be accorded its due respect, unusual items must be properly described and authenticated.

During the year we have co-operated with the Rarities Committee of *British Birds*—their findings have usually agreed with our own; and with Mr. K. Williamson, Migration Research Officer of the B.T.O.; and with others conducting enquiries into aspects of particular species under the aegis of the B.T.O.

A meeting of the B.O.U. is to be held in York during the week-end March 24th to 26th, 1961, details of which will be published later. Our own members will be given an opportunity to participate. Arrangements are being made by Dr. E. W. Taylor and Mr Clifford J. Smith in conjunction with B.O.U. officials.

An average winter was followed by a remarkably dry spring. Little rain fell until July, after which rain fell at short intervals until autumn. Reservoirs were low in June, and few had filled up by autumn; rivers had some good spates in August-September.

In the dry spring, game-birds did well, as did other ground-nesting species. The more interesting breeding records include Red-breasted Merganser, Wigeon, Crossbill and probably Collared-Dove. Six Gannets hatched and were presumed reared. Blackbirds and Song-Thrushes had late broods in some areas, of which the Recorders would like particulars, as they would of the diminishing numbers of Sparrow-Hawks and Kestrels.

The spring migration in general was not abnormal. A Crane was around Lissett from April 16th to 27th. A Tawny Pipit on May 1st, and a Greenish Warbler on June 4th, occurred at Spurn. Ca. 30 Turtle Doves at Spurn on June 13th were unusual; as were a few Collared-Doves in May and September. The more usual rarities appeared on the coast in autumn: Yellow-browed and Barred Warblers, another Greenish Warbler, Bluethroats, Wryneck, Red-breasted Flycatchers, Red-backed Shrikes, a Scarlet Grosbeak and a Pallas's Warbler caught at Spurn. Passage waders were plentiful at a number of places inland as well as on the coast in August-September, with Little Stints in unusual numbers. Fairburn had some huge congregations of roosting hirundines, and a large number were ringed.

The appointment of Mr. P. J. Mountford as Warden of the Spurn B.O. from March 1st has meant an absence of blank days; and that the books contain material for a much more complete picture of events in 1960 than in any previous year. Traps have been kept in working order, and innumerable matters attended to as they arose. The larger numbers of birds ringed, and of ringed birds recovered, have increased the necessary clerical work in which several have helped, notably Lt.-Col. H. G. Brownlow—if one man was to do it all he would have little time, if any, for field-work.

It is not possible, in this interim Report, to give more than the broadest picture of the year to date; nor is it desirable further to anticipate the full Report of the year, which we can leave confidently in the competent hands of Mr. Wallis. Even there he will find that space prevents elaboration of some items, that occurrences of many species must of necessity be summarised. He will also find it possible to produce an adequate report that reflects the events of a very good year, for future reference. All should help by information supplied to the Recorders in the first few days of January of any important facts that have not already been sent in.

CONCHOLOGY

(Mrs. E. M. Morehouse): The dry summer of 1959 and the dry spring of 1960 may well account for the poor return of species found this year. In nearly every case members have few records and nothing outstanding to report.

Mr. Thompson sent *Pupa anglica* Fér. from a moss-covered wall near Gouthwaite Reservoir and a single live *Helicigona lapicida* L. from Fairburn. Mr. Robinson again records *Limnaea truncatula* Müll. in a bog at Rough Hey Wood in the Ryburn Valley, and many *L. pereger* Müll. (small) and *Ancylus fluviatilis* Müll. at Linton, also, in a cattle pond, hundreds of *Clausilia dubia* Drap. together with *Pyramidula rotundata* Müll., *Hygromia rufescens* Pen., *Cochlicopa lubrica* Müll. and *Vitrea pura* Alder. Mr. Appleyard took *Planorbis corneus* L. measuring 29-30 × 11-12 mm. at Newton Moat and *Zonitoides nitidus* Müll., *Limnaea pereger* Müll., *Planorbis contortus* L. and *P. albus* Müll. at Fairburn.

ENTOMOLOGY

Lepidoptera (F. Hewson): This has again been one of our 'poor' years, for there has been nothing of outstanding interest. The spring was early and pleasant but the weather deteriorated about the end of June. It may be, of course, that poor weather deters observation, and that some species at least were present in their usual numbers, though less active. Migrants have certainly been scarce, that yardstick of migration, *Plusia gamma* L. (Silver Y), has only been mentioned because of its scarcity. The majority of our butterflies have been noticeably fewer, two species only, *Dira megera* L. (Wall) and *Vanessa atalanta* L. (Red Admiral) appear to have been abundant. S. M. Jackson remarks upon one advantage of the wet summer in that there were fewer fires in the East Riding, Skipwith Common usually has at least one annually, but this year had none. However the rains came too late to save large areas on Norland Moor and near Helmsley and Hatfield Moors. It has often been pointed out that grass verges are much more regularly sprayed and mown. Mr. Jackson reports finding that some woodland rides have been similarly treated. In one such situation Yellow Loosestrife, upon which a colony of *Anticollix sparsata* (Dentated Pug) fed, was quite unnecessarily devastated. There are no additions to our list, merely a number of interesting records, and for these I am grateful to the following observers: H. Archer, J. Armitage, M. D. Barham, J. Briggs, W. E. Collinson, R. Crossley, Mrs. F. C. Draper, E. F. Gilmour, C. R. Haxby, A. M. R. Heron, J. Hudson, G. E. Hyde, S. M. Jackson, J. A. Lewis, R. S. Pollard, E. Richards, C. I. Rutherford, J. H. Seago, C. C. Smith, A. Steel and A. H. Wright.

- Apatelealni* L. (Alder). (64) A youth named Peter Bloomfield picked up a larva at Temple Newsam, East Leeds. It was about to pupate on the end of a rotten branch lying on the ground in a plantation of sycamores; J.A.
- Nonagria dissoluta* Treitschke (Brown-Veined Wainscot). Sandburn, 10/8, all of the light-brown veined form *arundineata*. (64) At Scathingwell this species was much commoner and about 25% of those taken were of the dark-brown variety, *hessii*; E.R. and C.I.R.
- Panemeria tenebrata* Scop. (Small Yellow Underwing). (64) Askham Bog, 5/6; C.C.S.
- Arenostola phragmitidis* Huebner (Fen Wainscot). Sandburn, 10/8, including var. *rufescens* Tutt; E.R. and C.I.R.
- Meristis trigrammica* Hufnagel (Treble Lines). (62) Pickering, M.V.L., one 25/6; J.B. (63) Wombwell, near Barnsley, several; J.H.
- Hydraecia lucens* Freyer (Large Ear). (61) Skipwith Common, M.V.L., two 3/9; J.B. (64) Harrogate, M.V.L., 13/9; C.I.R.
- Procus furunculus* Schiff. (Cloaked Minor). (64) Far Headingley, Leeds, M.V.L., 8/9; C.C.S.
- Spalotis ravidia* Schiff. (Stout Dart). (64) Far Headingley, Leeds, M.V.L., 7/9; C.C.S.
- Diarsia florida* Schmidt (Marsh Square Spot). (61) Skipwith Common, M.V.L., two, 2/7; J.B. and C.R.H. (64) Harrogate, M.V.L., 22/6; C.I.R.
- Anaplectoides prasina* Schiff. (Green Arches). (62) Pickering, M.V.L., one, 25/6; C.R.H.
- Anchoscelis lunosa* Haworth (Lunar Underwing). (61) Skipwith Common, M.V.L., 10/9; J.B. and C.R.H. (64) A dark ♀ at light at Brayton Barff, 23/9; S.M.J.
- Tiliacea citrargo* L. (Orange Sallow). (64) Far Headingley, Leeds, M.V.L., 18/9; C.C.S.
- T. aurago* Schiff. (Barred Sallow). (64) Far Headingley, Leeds, M.V.L., 18/9; C.C.S.
- Cucullia chamomillae* Schiff. (Chamomile Shark). (63) Wakefield, M.V.L., 18/5, 26/5, 27/5; A.M.R.H.
- C. umbratica* L. (Shark). (64) Burley Woodhead, Wharfedale, several at light, 26/6; F.C.D.
- C. verbasci* L. (Mullein). Near York, larvae; E.R.
- Xylena exoleta* L. (Swordgrass). (61) Near Holme-on-Spalding Moor, one at sugar, 22/10; S.M.J. (64) Harrogate, M.V.L., 7/10; C.I.R.
- X. vetusta* Huebner (Red Swordgrass). (64) Scathingwell, one in perfect condition at Ivy bloom, 15/10; C.R.H.
- Heliophobus albicolon* Huebner (White Colon). (63) Doncaster, M.V.L., two; G.E.H.
- Episema caeruleocephala* L. (Figure of Eight). (61) Constable Burton, six larvae, 2/6; J.A.L. (62) Larvae abundant in Thornton Dale, -/6; M.D.B. (64) Larvae near Thorner, Leeds, -/5.

- Orgyia gonostigma* Fab. (Scarce Vapourer). (61) Larvae common at Skipwith Common, 28/5; E.R. and C.I.R. (63) One larva at Thorne Moor; A.S.
- Cosymbia albipunctata* Hufnagel (Birch Mocha). (61) Allerthorpe Common, 14/7. (62) Strensall Common, 6/8, both worn; S.M.J.
- Comibaena pustulata* Hufnagel (Blotched Emerald). (63) Doncaster, M.V.L.; G.E.H.
- Trichopteryx carpinata* Bork. (Early Tooth-Striped). (62) Scarborough, -/4; R.S.P. (64) Askham Bog, 6/4; C.C.S.
- Chloroclystis coronata* Geyer in Huebner (V-Pug). (64) Harrogate, M.V.L., 13/9, new here to C.I.R.
- Eupithecia venosata* Fab. (Netted Pug). (64) Bred July, larva near Fairburn; S.M.J.
- E. trisignaria* H.-S. (Triple-Spotted Pug). (64) Harrogate, M.V.L., 31/5; C.I.R.
- E. tantillaria* Boisd. (Dwarf Pug). (64) Bishop Wood, -/5; S.M.J.
- E. fraxinata* Crewe (Ash Pug). (64) Harrogate, M.V.L., 2/6/57, 3/6/60; C.I.R.
- E. sobrinata* Huebner (Juniper Pug). (64) Far Headingley, Leeds, M.V.L., 14/7; C.C.S.
- E. extensaria* Freyer (Scarce Pug). (61) Kilnsea larvae on Wormwood 3/9; S.M.J.
- Eucymatoge subnotata* Huebner (Plain Pug). (64) Far Headingley, Leeds, 10/7; C.C.S.
- Anaitis efformata* Guenee. In the two chief localities for this species, railway banks near Selby, the food-plant, St. John's Wort, was badly burnt in September, 1959, when the lepidopteron would be in the ova or young larva stage. In spite of this S.M.J. found numbers in 1960.
- Triphosa dubitata* L. (Tissue). (64) Askham Bog, one 23/4; E.R.
- Perizoma bifaciata* Haworth (Barred Rivulet). (62) Two reared, larvae taken near Scarborough, 1959, emerged -/6/60. (61) Larvae plentiful on Red Bartsia at Kilnsea, near Spurn, -/9/60; S.M.J.
- Nycterosea obstipata* Fab. (Gem). (64) Harrogate, M.V.L., 23/10; C.I.R.
- Oporinia filigrammia* H.-S. (Small Autumnal Carpet). (64) Harrogate, M.V.L., 4/9; C.I.R.
- Ectropis crepuscularia* Huebner (Small Engrailed). (64) Harrogate, M.V.L., 25/5; C.I.R.
- Hemerophila abruptaria* Thun. (Large Waved Umber). (61) J.B. netted a forewing which spiralled down after a bat had flown over his M.V. light-trap at Skipwith Common, 22/5.
- Biston betularia* L. (Peppered). (63) Type reared from a larva at Wath-on-Dearne, 1959, the first in the district to J.H.S. (64) Two typical at M.V.L. at Far Headingley, 20/6; C.C.S.
- Deilephila porcellus* L. (Small Elephant Hawk). (64) Far Headingley, Leeds, M.V.L., one, 4/7; C.C.S.
- Acherontia atropos* L. (Death's Head Hawk). (64) A fully-fed larva, found in a Leeds garden, was taken to J.A. on 5/9. (62) A moth was taken at Scarborough, -/8; R.S.P. (63) A ♀ in fine condition found resting on the roof of a works at Barnsley on 25/9 was taken to J.H.S.
- Herse convolvuli* L. (Convolvulus Hawk). (63) One at Doncaster, 5/9, taken to E.F.G. One at Denaby Main Colliery, *South Yorkshire Times*, per J.H. (64) One at Leeds, 5/9, taken to J.A.
- Drepana binaria* Hufnagel (Oak Hooktip). Sandburn, York, 10/8; E.R.
- Phlyctaenia crocealis* Huebner. (61) Skipwith Common, several, 3/7; S.M.J.
- Lasiocampa quercus* L. f. *callunae* Palmer (Northern Eggar). A ♂ seen flying at Langsett, 14/8 (this is the wrong year for the imago, and August very late). A 'black' larva same locality and date later spun a black cocoon; J.H.S. Larvae on Burley and Hawksworth Moors included one or two dark ones; F.C.D.
- Eriogaster lanestris* L. (Small Eggar). (62) Pickering, larvae 11/6; E.R. and C.I.R. Larval webs were quite common on the roadsides around Thornton, Pickering and Newton, May to August, M.D.B. reports that he has only seen it once before, in Haugh Rigg.
- Procris sticticus* L. (Forester). (64) Askham Bog, 5/6; C.C.S.
- Zeuzera pyrina* L. (Leopard). (64) Far Headingley, Leeds, M.V.L., 9/7; C.C.S.
- Euxanthus zoegana* L. (61) One seen in Brantingham Dale, near Brough, 27/8; S.M.J.
- Sphécia bembeciformis* Huebner (Lunar Hornet). (64) Over a dozen larvae found in cut stems of osier gathered at Haddlesey, an old-established habitat five miles south of Selby; S.M.J.

Hymenoptera (W. D. Hincks): As might have been expected the exceptional climatic conditions of last season, heightened by the relatively low winter and spring rainfall this year, have resulted in a poor season for insects generally, a situation which has been particularly noticeable in the North of England. Both plant-feeding and parasitic Hymenoptera have been involved, the latter in common with the hosts on which they normally feed. The sawflies were notably adversely affected, especially by comparison with the exceptional abundance of some species in spring 1959. Even the ubiquitous pests such as the gooseberry sawfly and the rose-feeding *Cladius pectinicornis* were entirely absent for the first time in my own garden, and in the field both adults and larvae of almost all species were very scarce or failed to appear. This disappointing picture is hardly relieved by a few early interesting county additions such as *Empria pumila* Konow, and *Amauronematus viduatus* (Zetterstedt), taken at Askham Bog on June 1st, the former by Mr. H. M. Russell and the latter by the Recorder.

The same conditions were depressingly evident in regard to the Aculeata and were equally true of the whole of the Parasitica, except that in this case, since some 4,000 species are involved, a quantity of collectable material was available though lamentably less than in normal seasons.

At this time of the year when collecting has hardly yet ceased, it is too early to predict whether or not some interesting records occur amongst the fewer species collected. For this and other reasons the Recorder's recent practice of publishing the county additions every two or three years, instead of annually, will be adhered to, primarily in order to include the many records resulting from the now completed Malham Survey, the results of which are due for publication in the near future. It must also be remembered that other materials derived from previous seasons are constantly being worked out and some interesting earlier records have appeared for inclusion in the next list. A number of new British species have been discovered at Malham and elsewhere in the county in recent seasons. For instance, a *Trioxys* which the Recorder was unable to identify with any known species has been described as *T. hincksi* by Dr. Mackauer of Munich and several additional specimens have now been collected at Malham. A new *Tetrastichus* from Malham is in the course of description by Dr. Graham of Oxford. In a recent paper (1960, *Ent. mon. Mag.* 95 : 210-216) twelve new British species of Mymaridae are brought forward, three of them new to science, and as many as six based on Yorkshire material. It is therefore hoped to present an interesting list of county additions in the future but it can be confidently predicted that the novelties for 1960 are likely to be very few.

The Recorder's thanks are due to Messrs. A. Brindle, H. N. Michaelis, H. M. Russell, and Mr. and Mrs. Flint for specimens and records.

Coleoptera (J. H. Flint): During 1960 the conditions of 1959 seemed likely to be repeated and towards the end of June dry conditions were making collecting difficult. Sweeping the dried vegetation was producing very little and the marshy areas were drying out. Rain in July improved matters, but too much rain during the remainder of the year seriously restricted collecting. Several collectors mentioned an apparent scarcity of beetles and the writer has experienced this when sweeping, but collecting under other conditions produced results. Large numbers of Scolytidae were found under bark, and pools formed during building operations near Shadwell, Leeds, contained large populations of Dytiscidae in early October. Mrs. K. G. Payne forwarded collections of beetles and bugs taken in the pool recently excavated at Askham Bog and reported that the insect population there was still very sparse. Examination of this material revealed only common beetles and none of the Askham Bog specialities. Future samples are awaited with interest.

Few records have been received this year, but there are four additions to the county list (†) and nine to the vice-counties (*), and I am indebted to Mr. E. W. Aubrook Dr. W. D. Hincks Dr. J. L. Newton and Mr. F. H. Myers for records. The initials used are those of the above and the writer.

Bembidion punctulatum Drap. (63) Gargrave, banks of the River Aire, 3/7/60; J.H.F.

Deronectes assimilis (Pk.) (64) Golden Acre Park, Leeds, 20/3/60; J.H.F.

Rantus exoletus (Forst.) (62) Pilmoor, 16/3/60; J.H.F.

†*Sericoderus lateralis* (Gyll.) (62) West Ayton, Scarborough, on window, 16/7/60; E.W.A.

Scaphisoma agaricinum (L.) (64) Grantley, 30/9/60; J.L.N.

- **Acidota cruentata* Mann. (63) Stones Wood, Stockmoor, Huddersfield, 5/12/59; E.W.A.
- †*Bledius praetermissus* Will. (61) Bridlington, 6/6/60; E.W.A.
B. dissimilis Er. (61) Bridlington, 6/6/60; E.W.A. The only known British locality.
- **B. defensus* Fauv. (63) Gargrave, vertical banks of River Aire, 3/7/60; J.H.F.
- **B. pallipes* (Grav.) With the above.
- **Gyrophaena angustata* Steph. (62) West Ayton, Scarborough, 22/7/60; E.W.A.
- **Microglossa nidicola* (Fairm.) (62) Aldwark, banks of River Ouse, 1/7/60; E.W.A.
- **Malthodes pumilus* (Breb.) (63) Farnley Tyas, Huddersfield, fairly commonly on flowers of Heath Bedstraw, 18/6/60; and previously at Dalton, Huddersfield; E.W.A.
- Hylecoetus dermestoides* (L.) (62) Duncombe Park, Helmsley, larvae, 16/3/60; J.H.F.
- Georissus crenulatus* (Rossi.) (61) Bridlington, 6/6/60. (62) Topcliffe, banks of River Swale, 15/6/60; E.W.A. Cornelian Bay, Scarborough, 22/8/60; J.H.F. Not recorded for 45 years; probably overlooked.
- **Carpophilus sexpustulatus* (F.) (61) Goodmanham, several specimens in very old and decayed *Polyporus squamosus*, 24/4/60; W.D.H.
- Chilocorus bipustulatus* (L.) (64) Adel Moor, Leeds, commonly on heather; 6/8/60; J.H.F.
- †*Cis bilamellatus* Fowler (61) Skipwith Common, 23/6/60; E.W.A.
- C. festinus* Gyll. (62) Helmsley, 4/9/60; E.W.A.
- Hoplia philanthus* Füss. (64) Asenby, near Topcliffe, 26/6/60; B. Dawson (teste J.H.F.).
- Acanthococinus aedilis* (L.) (63) Bradford, in town centre, 23/8/60; F.H.M.
- Dorytomus melanophthalmus* (Pk.) (64) Castley Ford, Arthington, 19/6/60; J.H.F.
- **D. rufatus* (Bed.) (64) Moss Plantation, Shadwell, Leeds, 12/7/60; J.H.F.
- **Zacladus geranii* (Pk.) (63) Skipton, canal banks, 3/7/60; J.H.F.
- †*Amalus scortillum* (Hbst.) (64) Scarcroft, Leeds, in grass tufts, 10/1/60; J.H.F.
- Hylesinus crenatus* (F.) (64) East Rigton, on ash bark 14/8/60; J.H.F.
- Dryocoetes villosus* (F.) (64) East Rigton, in oak bark, 14/8/60; J.H.F.

Hemiptera (J. H. Flint): This has been a poor year for the Hemipterist. The first half was good, but bugs and hoppers reach their greatest abundance in August and September and the cool, wet late summer and autumn spoilt collecting when the collector should have been busiest. A general impression is that Hemiptera, apart from some very common species, have been present in reduced numbers. A further attempt was made during the year to locate specimens of *Salda morio* Zett. and *S. muelleri* Gmel. both of which had been taken together beside a pool on Ilkley Moor in 1953. The pool was subsequently drained and in later years no further examples could be found. This year nymphs of a *Salda* were found on another part of the moor but by the time a second visit could be paid (September) the wet and cold conditions had ended their season and no further examples were found. The 1953 record is of interest because there exists no other record of the two being taken together.

The records listed below, with the exception of those indicated are the writer's, who is responsible for all the determinations. They are largely restricted to county additions (†) and vice-county additions (*). Much more work must be done before it is possible to assess the relative frequency of most Hemiptera in the county.

HETEROPTERA

- **Zicrona coerulea* (L.) (64) Lindley Wood, 29/5/60.
- Piesma maculatum* (Cost.) (63) Cawthorne, 20/8/49; E. W. Aubrook.
- †*Anthocoris minki* Dohrn. (64) Adel, Leeds, 6/8/60; Shadwell, Leeds, 14/8/60; sparingly on ash.
- **A. gallarum-ulmi* (Deg.) (64) Meanwood, Leeds, 7/7/60.
- Zylocoris galactinus* (Fieb.) (63) Thurstonland, 8/8/59; E. W. Aubrook.
- †*Myrmedobia tenella* (Zett.) (64) Askham Bog, 27/7/46; E. W. Aubrook.
- **Lopus decolor* (Fall.) (64) Golden Acre Park, Leeds, by sweeping grasses, 23/7/59.
- Tinicephalus hortulanus* (M.-D.) (64) Grass Woods, Grassington, on *Helianthemum*, 12/6/60. The second record for the county.
- **Orthotylus ochrotrichus* Fieb. (64) Collingham Bridge, 15/7/60.
- Teratocoris viridis* D. & S. (64) Ilkley Moor, at 1,200 ft., 7/6/60.
- **Saldula scotica* (Curt.) (63) Gargrave, banks of River Aire, 3/7/60.

HOMOPTERA

- **Macropsis prasina* Boh. (61) Allerthorpe Common, 21/6/59.
 **Macrosteles viridigriseus* (Edw.) (63) Gargrave, 3/7/60.
 **Chlorita flavescens* (F.) (64) Roundhay Park, Leeds, abundantly by beating spruce, 21/2/60.
 †*Delphacodes dubia* (Kirsch.) (64) Etchell Craggs, Bardsey, 18/5/59; Lindley Wood, 17/5/59.
 **D. albofimbriata* (Sig.) (64) Adel Bog, Leeds, 13/5/59.
 **D. exigua* (Boh.) (64) Adel Moor, Leeds, 5/8/59.
 **Criomorpus nigrolineatus* (Scott) (64) Etchell Craggs, Bardsey, 4/7/60. Previously only known from Spurn within the county, then the most northerly point of its known British range, this conspicuous and distinctive hopper is not easily overlooked.
 **Aphalara calthae* (L.) (64) Adel Moor, Leeds, 12/9/59.

Orthopteroid and Neuropteroid Orders (A. Brindle): Although the past season has not been productive, several features have been of interest. After the drought of 1959 the water table generally had been lowered to such an extent that the winter rains of 1959-60 were insufficient to bring it up to a normal level. At Askham Bog, towards the end of April 1959, there was considerable flooding and part of the bog was inaccessible owing to surface water. A year later, at the end of April 1960, the water level was very low and in damp patches of dead leaves along the sides of the main path (normally a water filled ditch) large numbers of caddis larvae were found in almost terrestrial habitats. Since the weather continued dry afterwards until the end of June it is evident that the caddis larvae population of Askham Bog would be considerably (even if only temporarily) depleted owing to the complete drying-up of their habitat.

This unusually low water table has been noted in other parts of the county, and it was not brought up to normal level by the rain during July and August. Trichoptera generally, however, have been reasonably prominent during the year.

A search was made in the spring for the rare stonefly *Rhabdiopteryx anglica* Kimmins, first taken at Jugger Howe Beck in North-east Yorkshire on April 10th, 1927, by E. Percival. The original locality was searched thoroughly but unsuccessfully, possibly owing to the late date, May 17th, although this species has now been found in Radnorshire on several occasions in May by Mr. J. Spittle.

The Neuroptera have not been plentiful, the cold wet weather of July and August being most unfavourable.

The cards for the Orthoptera are now being compiled from existing records, and when complete should show a most satisfactory total for such a northerly county as Yorkshire.

Diptera (H. M. Russell): So far as Yorkshire Diptera is concerned, 1960 ranks as one of the least productive years on record. Looking back through previous Reports, I find that there is usually something outstanding to mention, but I am sorry to say that apart from eleven vice-county records and a few other species worthy of note, the year's collections reflect the almost total absence of summer weather.

The addition of *Microsania pectinipennis* (Mg.) to V.C. 64 (the second Yorkshire record), is of some interest. This species is usually to be found in the vicinity of heath fires, the insects flying even in the smoke and settling on the still hot ground and burnt herbage. My specimens were taken under similar conditions associated with bonfires in my garden during the months of June and August. I suggest that it might be worth while looking for specimens near bonfires during the summer months, for I feel that it is a relatively common, though overlooked, species.

* = New Vice-County Record.

PSYCHODIDAE

- **Pericoma pilularia* Tonn. (62) Mallyan Spout, Goathland, 18/8/60.
 **P. canescens* (Mg.) (62) Mallyan Spout, Goathland, 18/8/60.
Psychoda phalaenoides (L.) (62) Mallyan Spout, Goathland, 18/8/60.
 **P. setigera* Tonn. (62) Mallyan Spout, Goathland, 18/8/60.
 **P. lobata* Tonn. (62) Mallyan Spout, Goathland, 18/8/60.

EMPIDIDAE

- **Hilara brevistyla* Collin. (62) Goathland, 18/6/60.
 **Rhamphomyia stigmosa* Mcq. (62) Darnholme, Goathland, 18/6/60.

DOLICHOPODIDAE

- Scellus notatus* Fabr. (64) Hell Wood, Scarcroft, near Leeds, fairly common throughout June 1960.
Schoenophilus versutus Wlk. (64) Ha Mire, Malham, 27/7/56.
 **Medeterus tristis* (Ztt.) (62) Goathland, 18/6/60.
M. muralis Mg. (64) Temple Newsam Woods, Leeds, July and August, 1960.
 **Rhaphium longicorne* Fln. (62) Goathland, 18/8/60.

SAPROMYZIDAE

- Lauxania cylindricornis* F. (64) Fairly common at Scarcroft, near Leeds, during June 1960.

PLATYPEZIDAE

- **Microsania pectinipennis* (Mg.) (64) Whitkirk, Leeds, 21/6/60 and 1/8/60, swarms in the vicinity of bonfires.

DROSOPHILIDAE

- Parascaptomyza disticha* Duda. (64) Colton, near Leeds, 15/9/60.
Drosophila funebris F. (64) Fairly common in the Whitkirk area, near Leeds, throughout October 1960.

AGROMYZIDAE

- **Agromyza nigripes* Mg. (62) Goathland, 18/8/60.
 **Phytomyza affinis* Fall. (62) Swept from sides of old railway track, Goathland, 18/8/60.

Plant Galls (E. F. Gilmour): A comparatively poor summer probably resulted in less field work than usual by collectors, and consequently fewer records. Where collecting was done, however, large number of galls were found, in one instance, for example, eight different species on one small branch of oak.

Grateful thanks are once again tendered to those stalwarts who continue to send specimens. The initials in the following list standing for the following persons: F. E. Branson (F.E.B.), E. F. Gilmour (E.F.G.), and T. F. Medd (T.F.M.).

	<i>Agent</i>	<i>Plant</i>
HYMENOPTERA	<i>Neuroterus quercus-baccarum</i> (Linn.)	<i>Quercus robur</i> Linn.
	f. <i>lenticularis</i> (Cliv.) (64), near Burnt Yates, 21/8/60; F.E.B. (63) near Littleworth, near Rossington, -/7/60; E.F.G.	
	<i>N. numismalis</i> (Geoffr.) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.
	<i>Andricus testaceipes</i> (Hartig) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.
	<i>A. curvator</i> (Hartig) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.
	<i>A. quercus-ramuli</i> (Linn.) (62) Castle Howard Woods, near Malton, 26/5/60; T.F.M.	<i>Quercus robur</i> Linn.
	<i>A. fecundator</i> (Hartig) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.
	<i>A. quercus-radicis</i> (Fabr.) (62) Castle Howard Woods, near Malton, 26/5/60; T.F.M.	<i>Quercus robur</i> Linn.
	<i>A. curvator</i> (Hartig) f. <i>collaris</i> (Hartig) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.
	<i>A. marginalis</i> (Schlecht.) (64) near Burnt Yates, 21/8/60; F.E.B.	<i>Quercus robur</i> Linn.

HYMENOPTERA (cont.)	<i>Trigonaspis megaptera</i> (Panz) f. <i>Quercus robur</i> Linn.
	<i>renum</i> (Hartig) (63) near Littleworth, near Rossington, -/7/60; E.F.G.; (64) near Burnt Yates, 21/8/60; F.E.B.
	<i>Biorrhiza pallida</i> (Oliv.) f. <i>aptera</i> (Fabr.) (63), Finningley, near Doncaster, -/7/60; E.F.G.
	<i>Pontania vesicator</i> (Bremer-Wolf) (64) near Burnt Yates, 21/8/60; F.E.B.
	<i>P. salicis</i> (Linn.) (61), Allerthorpe Common, 30/6/60; T.F.M.
	<i>P. proxima</i> (Lepel) (64) River Foss, York, 2/7/60; F.E.B.
	<i>Rhodites rosae</i> (Linn.) (64) Limestone Quarries, Burton Leonard, 16/7/60; F.E.B.
DIPTERA	<i>Rhabdophaga rosaria</i> (L�w) (64) River Foss, York, 2/7/60; F.E.B.
ACARI	<i>Epitrimerus trilobus</i> Nalepa (64) near Burnt Yates, 21/8/60; F.E.B.
	<i>Eriophyes macrorrhynchus</i> Nalepa. (64) near Burnt Yates, 21/8/60; F.E.B.
	<i>E. centauri</i> Nalepa. (64) Limestone Quarries, Burton Leonard, 16/7/60; F.E.B.
FUNGI	<i>Puccinia aegopodii</i> Schum. (64) Brearton, near Knaresborough, 13/6/60; F.E.B.

BOTANY

(Miss D. R. Walker): The mild winter, with very little snow and frost, was followed by an early spring and the warm sunshine around Easter brought a rush of flowers. Outdoor peaches were in flower then and this year there was a good set—particularly in the Harrogate area where an excellent crop reached maturity on Harlow Hill, nearly 600 feet above sea-level. Hawthorns flowered profusely all over the county, hedges being so well covered that literally hardly a leaf could be seen. At the Whitsuntide meeting at Driffield it was generally agreed that the show of Hawthorn blossom was the finest in recollection. The same could now be said of the show of haws; the red colouration of the laden hedges showing up for some considerable distance away.

Of the trees, Ash has flowered and fruited well after the rest of last year; Beech, Elm, Horse Chestnut and Holly have also cropped well and in the case of the last-mentioned, there are reports that some normally barren Hollies have this year borne fruit. Of garden fruits, apples and pears were abundant, plums were not so good and gooseberries did well as did raspberries, but strawberries suffered from the drought which continued from Easter until the end of June. Brambles have also had an excellent crop. Ornamental shrubs flowered well and in the Harrogate area flowering currants are now fruiting well. There are also reports of a good show of flowers on conifers.

Up to the end of June grass was parched and thin, root crops were doing badly and weeds were sparse, but from then on the story was very different. The rain—which was all too frequent for many weeks—brought on a very lush growth; in one North Riding garden *Chenopodium album* was six feet tall.

There are reports of an excellent second flowering of many plants, some being better than the first display, the dry conditions earlier in the summer being, no doubt, responsible. Up on the moors the peat had dried out so deeply last year that it was slow in absorbing the rain when eventually the rain did arrive; this did not, however, affect the heather which has been very colourful.

As regards the effect, if any, of last year's prolonged drought, the only reports we have are from the Fairburn area and it is therefore assumed that there have been

no adverse effects observed. At Askham Bog where conditions in September 1959 were probably drier than at any time in living memory there was no evidence during the Sectional meeting there in September of this year that plants had suffered as a result.

May I appeal to members to send in more reports for the 1961 season.

Plant Records (C. M. Rob): Both the number of plant records and recorders is less than usual. Most of the native plants were found on the Union's excursions. Alien records are also fewer than in recent years. As a result of the drought in the early part of the summer grassland was brown and parched by late June and many plants had their flowering period curtailed by the abnormal conditions but the very wet weather from July onwards has resulted in much vegetative growth and poor flowering.

The Section was well represented at most Y.N.U. field meetings. At Driffield, some interesting plants were noted, in particular, *Oenanthe fluviatilis* new to V.C. 61, *Carex diandra*, the second record for the vice-county, and *Carex dioica*, the only recent record, were outstanding.

At Great Langton *Furmaria purpurea* was new to V.C. 65. *Chenopodium glaucum* was another interesting find; this plant has occurred in V.C. 65 as a wool alien but at North Ellerton was growing in mud by a small pond and no signs of shoddy manure being used were seen in the arable fields round about.

At this meeting *Allium oleraceum* and *A. vineale* were in good condition. Their distribution in Yorkshire would repay detailed investigation. Of the two *A. oleraceum* is the commoner, but *A. vineale* has been recorded from scattered localities throughout the county and appears to be mainly in the east and south-east. *A. scorodoprasum* is also widespread, often by rivers, but also in places by roadsides where it gets mown down each year. As it reproduces mainly by bulbils, cutting has resulted in the increase of this plant in some localities.

At Fairburn *Rumex palustris* was growing at the Fairburn end of the water with *R. maritimus*. Weather conditions appear to have suited the latter as at both Sutton-on-Forest V.C. 62 and Sutton Howgrave V.C. 65, the plant has been plentiful. The Dalton locality near Thirsk has been used as a pig farm and no plants appeared. The widespread practise of keeping pigs on free range is responsible for the disappearance of *Astragalus glycyphyllos* at Low Side near West Tanfield. *Gagea* also suffered here from pigs rooting about, but a few plants have survived, and may lead to a recovery. The present state of the Batts Island near Sleningford Mill is another example. Here the whole area, some two acres in extent, was formerly a mass of primroses. After pigs had been pastured on the ground there was no sign of a primrose and now after some twenty years the area is almost weed-free grassland, though about a dozen primrose plants have reappeared during the last two years. This method of pig-keeping is increasing and we shall no doubt see more examples of its effects on the flora.

Potentilla tabernaemontani at Ledstone survived the fire of 1959 but *Astragalus danicus* at Barnsdale Bar has been bulldozed away in the widening of the Great North Road. At Swinsty Reservoir both *Littorella* and *Limosella* have increased and *Alopecurus aequalis* is now plentiful in several places. *Stratiotes aloides* near Doncaster was in poor condition, very few plants being visible.

The Wharfedale naturalists report the increase of Corn Sow Thistle, *Sonchus arvensis*, particularly as a roadside weed. This plant seems to be getting more widespread and its distribution in Yorkshire, especially in the parts where arable land is rare, needs working out. This Society also records the occurrence of *Impatiens glandulifera*, in woodland above Duck Street near Pateley Bridge at about 1,300 feet.

Work on the distribution of the Bindweeds has continued. It appears that the alien *Calystegia sylvestris* is the more widespread, *C. sepium* being the species generally found in gardens. In addition the pink-flowered *C. pulchra* which was first recorded from the Calder bank at Mirfield in 1909 has been found at Baildon and Frizinghall. Pink-flowered bindweeds have also been found at Burnby, V.C. 61, and Great Ayton, V.C. 62, but these are awaiting confirmation and may be either *C. pulchra* or *C. dahurica*. *Datura* has turned up in several places, but public interest seems to be waning and there are fewer press reports of its occurrence. In one field dressed with wool shoddy over 200 plants were counted.

The small number of records received for native or long-established plants points to the need for more work to be done on the present distribution of some of the

rarer plants of the county. Many old records need confirming as present-day conditions have changed much of the countryside. Disused quarries and brick ponds are being filled with town refuse and spoil from road works, and more and more scrub clearance is taking place. Any comparisons of the present with the past state of the flora would therefore be a valuable contribution to the study of the Yorkshire flora.

Key to Initials.—Miss E. Crackles, R. Collins, Mrs. F. Draper, Mrs. J. E. Duncan, Rev. P. M. Garnett, Mrs. F. Houseman, J. E. Lousley, L. Magee, T. F. Medd, F. Murgatroyd, Miss M. M. Norman, Miss C. M. Rob, G. A. Shaw, Dr. W. A. Sledge, D. Seaward.

- Equisetum hyemale* L. (62) Saltburn, 1959; D.S.
Juniperus communis L. (62) Baysdale, in several places with a few young plants; Y.N.U. Excursion. (64) Highfolds Scar, Malham Tarn; *Proc. Leeds Phil. and Lit. Soc.*, comm. G.A.S.
 **Ranunculus calcareus* Butcher (61) River Hull, Driffield; R.C.
Actaea spicata L. (63) Ringhay Wood, Aberford; R. Crossley, comm. F.M.
Helleborus viridis L. (61) Sledmere; Y.N.U. Driffield Excursion.
 **Fumaria purpurea* Pugsl. (det. N. Y. Sandwith) (65) Shingle by River Swale, Kirby Fleetham; Y.N.U. Langton Excursion.
F. micrantha Lag. (64) Acomb Road and Dringhouses, York; T.F.M. det. N.Y.S.
Minuartia hybrida (Vill.) Schischk. (64) Bank of River Ure, Ripon Parks; C.M.R.
Rubus saxatilis L. (63) Red Land Dike, Stainland; F.M.
R. dasyphyllus (Rogers) Rogers (62) Castleton; R.C. (64) King Lane, Leeds; R.C. (65) Great Langton; R.C.
R. plicatus Weihe and Nees (64) Alwoodley Moss, Leeds; R.C.
R. sciocharis Sudre (64) Near Adel Dam; R.C.
R. carpiniifolius Weihe and Nees (64) Wigton Lane, Leeds; R.C.
R. nemoralis P. J. Muell. (64) King Lane, near Leeds; R.C.
R. lindleianus Lees (63) Newmillerdam; R.C.
R. ulmifolius Schott (62) Robin Hood's Bay; R.C. (63) Newmillerdam; R.C. (65) Kiplin, near Langton; R.C.
R. sprengelii Weihe (64) Bramhope Ponds, near Leeds; R.C.
R. vestitus Weihe and Nees (64) Etchall, near Leeds; R.C. (All the Rubi det. E. S. Edees.)
Potentilla tabernaemontani Aschers. (64) Great Close Hill, Malham; *Proc. Leeds Phil. and Lit. Soc.*, comm. G.A.S.
P. anglica × *erecta* (*P. suberecta* Zimmet.) (61) Everingham Carrs; E.C. det. D. E. Allen.
Agrimonia odorata (Gouan) Mill. (62) Hedge near Rush Wood, Carlton Miniott; C.M.R.
Ribes spicatum Robs. (65) Teesdale; Deepdale; Baldersdale; Lunedale; P.M.G.
Callitriche intermedia Hoffm. (63) Gargrave; F.H. det. W.A.S.
 **Oenanthe fluviatilis* (Bab.) Coleman (61) River Hull, Driffield; Y.N.U. Driffield Excursion.
Rumex hydrolopathum Huds. (64) Pond by path to Ripon Parks; C.M.R.
R. maritimus L. (64) Fairburn; Y.N.U. Excursion.
R. palustris Sm. (64) Fairburn; Y.N.U. Excursion.
Hyoscyamus niger L. (61) Wooddale; Y.N.U. Driffield Excursion. (64) Denton; F. Draper.
Euphrasia montana Jord. (64) Foxup, Littondale; W.A.S.
E. confusa Pugsl. (63 & 64) Gargrave; R.C. and F.H., det. Yeo.
E. brevipila Burnat and Gremli (62) Grosmont; R. Collins det. Yeo.
Stachys palustris × *sylvatica* (× *S. ambigua* Sm.) (65) Bowes; Y.N.U.-B.S.B.I. meeting.
Hieracium prenanthoides Vill. (65) Small Gill, Sleightholmedale, 1959, Y.N.U. Bowes Excursion, det. C. West.
Convallaria majalis L. (61) Wood at Sledmere; Y.N.U. Driffield Excursion.
Allium vineale L. (61) Welwick Gravel Pit, 1959; E.C. det. W.A.S. (62) Clifton Ings, York; T.F.M. (65) Kiplin; Y.N.U. Great Langton Excursion.
A. oleraceum L. (61) Near West Lutton; Y.N.U. Driffield Excursion. (62) Hutton Rudby; I.C.L. Catton and Carlton Miniott; C.M.R. (64) Fairburn 7 between Brayton and Gateforth; P.M.G. (65) Near Great Langton; Y.N.U. Cundall; C.M.R.

- Dactylorhiza fuchsii* × *incarnata* (61) Marshy ground near River Hull, Driffield; E.C.
D. incarnata (L.) Vermuel. subsp. *pulchella* (Druce) H. Harrison f. (61) Marshy ground by River Hull, Driffield; E.C.
D. purpurella (T. and T. A. Stephenson) Vermeul. (61) Flamborough Cliffs; H. O. Bunce, comm. E.C.
Listera cordata (L.) R. Br. (64) Ilkley Moor; J.E.D.
Sparganium minimum Wallr. (64) Inflow stream, Malham Tarn; *Proc. Leeds Phil. and Lit. Soc.*, comm. G.A.S.
Carex lasiocarpa Ehrh. (62) Castle Howard, west end of estate at no great distance from the Terrington Carr locality; J. Webster.
 The record for this species at Fenton Trans (64) included in last year's report should be deleted. The plant was wrongly identified.
C. diandra Schrank (61) Marshy ground by River Hull, Driffield; Y.N.U. Excursion.
C. dioica L. (61) Marshy ground by River Hull, Driffield; Y.N.U. Excursion.
Hordeum secalinum Schreb. (62) Banks of River Tees near Yarm; L.M. (65) Grass field, Baldersby; C.M.R.

ALIENS

- Anemone apennina* L. (63) Plantation, Otley Chevin; F.H. Given in *Flora* for 'near Otley 1843', ? same locality.
Papaver lateritium C. Koch (65) Shingle by River Swale, Great Langton; Y.N.U. Excursion.
P. hybridum L. (62) Shoddy field, Topcliffe; C.M.R.
Diploxys tenuifolia (L.) DC. (62) South Gare Breakwater; D.S. (65) Shoddy field, Berryhills, Kirklington; C.M.R.
Coronopus didymus (L.) Sm. (64) Dringhouses and Acomb Road, York; T.F.M.
Cardaria draba (L.) Desv. (62) Spreading at Teesmouth and along the railway track at Nunthorpe; I.C.L. Coatham; D.S. Waste ground near Sandsend; M.M.N.
Cardamine latifolia Vahl. (62) Near Great Ayton; I.C.L.
Erysimum cheiranthoides L. (61) Arable field, Elvington; R.C.
Camelina sativa (L.) Crantz (62) With *Linum*, field Scaling end of Ridge Lane; I.C.L.
Silene gallica L. (64) Baildon; F.H. Garden weed, Otley; J.E.D.
S. armeria L. (64) Garden weed, Otley; J.E.D.
Herniaria hirsuta L. (63) Linthwaite tip; F.H. det. J. E. Lousley.
Montia perfoliata (Willd.) Howell (64) Near Scarcroft Lodge pond, Scarcroft; M.M.N.
M. sibirica (L.) Howell (62) Several places near Danby; I.C.L. (64) Burley Wood-head; F.D.
Chenopodium hybridum L. (62) Middlesbrough, garden weed; I.C.L. Catton Hall garden; C.M.R.
Abutilon theophrasti Med. (61) Skeffling, 1959; D. Wade comm. E.C. det. J.E.L.
Geranium ibericum Cavanilles (64) Hirst Wood tip, Shipley; L.M.
Coronilla varia L. (62) Grosmont; I.C.L.
Lathyrus sylvestris L. (65) Railway bank, West Tanfield; C.M.R.
L. latifolius L. (62) Roadside near Marton-in-Cleveland; I.C.L.
Potentilla norvegica L. (63) Canal Bank, Gargrave; F.H. det. W.A.S.
Poterium polygamum Waldst. (61) Between Foxholes and Sherburn; W.A.S.
Acaena anserinifolia (J. R. and G. Forst.) Druce (61) Disused runway, Riccal Air-field; P.M.G. Skipwith Common; Hull Naturalists, comm. E.C.
Prunus lusitanicus L. (64) Kirkgill Wood, near Buckden; C.M.R.
Oenothera erythrosepala Borbas. (64) Baildon; F.H. det. J.E.L.
Bupleurum lancifolium Hornemann (63) Housing Estate, Batley; pupils of Healey C.P. School, Batley, comm. D. McClintock.
Coriandrum sativum L. (63) Shipley; F.H.
Cannabis sativa L. (62) Garden, High Kilburn, Thirsk; Mrs. J. Galley, comm. C.M.R., probably introduced with birdseed.
Lysimachia ciliata L. (62) Grounds of Poole Sanatorium, Nunthorpe; I.C.L.
Calystegia pulchra Brummitt (63) Frizinghall; H. D. Sutcliffe. Calder Bank, Mirfield, 1909; Brummitt, comm. G. A. Shaw. (64) Baildon; F.H.
Veronica filiformis Sm. (63) Bank of River Hodder, Slaidburn; F. Elliman, comm. F.M.

- Linaria purpurea* (L.) Mill. (64) Waste ground, Addingham Road, Ilkley; L.M. det. D.McC. (62) Scalby Mills, Scarborough; P. Rowntree comm. A. W. Ping.
L. repens (L.) Mill. (64) Waste ground, Addingham Road, Ilkley; L.M. det. D.McC.
L. purpurea × *repens* (64) With parents, Addingham Road, Ilkley; L.M. det. D.McC.
L. bipartita Willd. f. *alba* (61) Alexandra Dock, Hull, 1959; B. Pashby comm. E.C. det. J.E.L.
Menha longifolia × *rotundifolia* (*M. niliaca* Juss. ex Jacq.) (61) Hull, 1959; E.C. det. J.E.L.
Ambrosia trifida L. (61) Skeffling, 1929; D. Wade comm. E.C. det. J.E.L.
Anthemis tinctoria L. (61) Near Cowlam; Y.N.U. Driffled Excursion. (65) River shingle near Great Langton; Y.N.U. Langton Excursion.
Cicerbita macrophylla (Willd.) A. Gray (65) Roadside, Wallerby, near Northaller-ton; C.M.R.
Senecio squalidus L. (63) Norland and Ovenden, near Halifax; F.M.
Poa palustris L. (62) Topcliffe Station; C.M.R.

Bryology (G. A. Shaw): Two field meetings have again been held, the first at West End, Washburndale, in April, and the second at Queen Mary's Dubb, Ripon. Near the Dubb we were able to see once again *Camptothecium nitens*, but did not locate *Amblystegium compactum*, both of which were first found here in 1956 by Mrs. J. Appleyard.

Two important papers on the bryology of the Malham Tarn district have been published during the year. These are 'Mosses and Liverworts of the Malham District' by Dr. M. C. F. Proctor, in Vol. 1, No. 2, of *Field Studies*, and 'The Vegetation of the Malham Tarn Area' by C. A. Sinker, in *Proceedings of the Leeds Philosophical and Literary Society, Scientific Section, Vol. VIII, Part V*.

Some of the more interesting records are given below. Those from the Malham Moor area are taken from the above-mentioned papers.

- Oligotrichum hercynicum* (Hedw.) Lam. and DC. (62) Baysdale; Y.N.U. Excursion.
Polytrichum alpestre Hoppe (64) Tarn Moss.
Fissidens rufulus B. and S. (64) Gordale Beck Head.
F. osmundoides Hedw. (64) West End; Y.N.U. Excursion.
Archidium alternifolium (Hedw.) Schp. (64) Tarn House Plantation.
Seligeria doniana (Sm.) C.M. (64) Tarn House Plantation; Great Close Hill.
Pseudephemerum nitidum (Hedw.) C. Jens. (64) Mud of dried-up dam, Shaw Mills; F.E.B.
Dicranella cerviculata (Hedw.) Schp. c. fr. (62) Baysdale; Y.N.U. Excursion.
Campylopus atrovirens De Not. (64) Great Close Mire.
Grimmia alpicola Hedw. (64) Tarn shore; outflow stream; Gordale Beck Head.
Tetraphis pellucida Hedw., c. fr. (62) Baysdale; Y.N.U. Excursion.
T. browniana (Dicks.) Grev. (62) Baysdale; Y.N.U. Excursion.
Orthodontium lineare Schwaegr., c. fr. (62) Baysdale; Y.N.U. Excursion.
Mnium orthorrhynchum B. and S. (64) Highfolds Scar.
 **M. rugicum* Laur. emend. Tuomikoski (64) Askham Bog; W. Ingham, 1919 (first county record). (64) Tarn Fen, 1953.
M. seligeri (Jur. ex. Lindb.) Limpr. (64) Thieves Moss, Austwick; G.A.S., 1947. (64) Tarn Fen; Ha Mire; Great Close Mire; 'Outflow Mire'.
Cinclidium stygium Sw. (64) Ha Mire; Great Close Mire; Tarn Fen East; Spiggot Hill Fen.
Philonotis caespitosa Wils. ex Milde (64) West End; Y.N.U. Excursion.
Heterocladium heteropterum (Bruch) B. and S. (65) Lune bank, near Sedbergh; G.A.S. (64) Reynard Crag, near Birstwith; F.E.B.
Thuidium delicatulum (Hedw.) Mitt. (64) Tarn Fen.
Amblystegiella confervoides (Brid.) Loeske (64) Tarn House Plantation.
Acrocladium giganteum (Schp.) Richards and Wallace (61) Driffled; G.A.S.
Riccia sorcarpa Bisch. (64) Frequent about Litton; G.A.S. In several places about Tarn House, Malham.
Riccardia sinuata (Dicks.) Trev. (62) Baysdale. (64) West End; Y.N.U. Excursion.
Metzgeria furcata (L.) Dum. (65) Lune bank, near Sedbergh; G.A.S.
Moerckia flotoviana (Nees) Schiffn. (64) Great Close Mire; Spiggot Hill Fen.
Ptilidium ciliare (L.) Hampe (64) Malham Lings.
P. pulcherrimum (Weber) Hampe (64) Tarn Fen.

continued on page 30

YORKSHIRE

INCOME AND
Year ending

1959		INCOME				£ s. d.		£ s. d.	
£	s. d.					£	s. d.	£	s. d.
507	11 4	Subscriptions						548	17 6
7	9 6	Sale of Mycological Papers, Russula, etc.						15	0 8
5	11 2	Sale of Other Publications						4	0 6
21	7 6	Interest on Investments						21	7 6
7	1 10	Bank Interest... ..						18	15 10
43	18 3	Donations and Tax thereon						36	4 3
		Tax on Covenanted Subscriptions				207	8 3		
—		Less Reserve				150	0 0		
								57	8 3
<hr/>						<hr/>			
£592 19 7						£701 14 6			
<hr/>						<hr/>			

BALANCE SHEET

1959				£ s. d.		£ s. d.	
£	s. d.			£	s. d.	£	s. d.
ACCUMULATED FUNDS—GENERAL:							
100	0 0	Booth Fund				100	0 0
100	0 0	Cheeseman Fund				100	0 0
250	0 0	R. C. Fowler-Jones Legacy				250	0 0
100	0 0	E. G. Bayford				100	0 0
							550 0 0
550	0 0						
MYCOLOGICAL FUND:							
		Sales—Cortinarius				22	9 0
—		Less Loan to General Fund repaid				12	3 2
							10 5 10
ORNITHOLOGICAL FUND:							
		Balance brought forward				100	0 0
		Donation				25	0 0
		Interest from Investment				3	0 0
							128 0 0
		Less Expenditure				28	0 0
100	0 0						100 0 0
LIFE MEMBERS' ACCOUNT:							
		Balance brought forward				165	0 0
		Less Transfer to Subscriptions... ..				15	0 0
165	0 0						150 0 0
—		Reserve for Contingencies					150 0 0
15	15 0	Suspense Account					15 15 0
39	0 0	Subscriptions in advance					21 2 0
0	9 4	Sundry Creditors					134 17 6
INCOME AND EXPENDITURE ACCOUNT:							
		Balance brought forward				170	17 7
		Add Excess Income over Expenditure				51	12 6
170	17 7						222 10 1
<hr/>						<hr/>	
£1041 1 11						£1354 10 5	
<hr/>						<hr/>	

NATURALISTS' UNION

EXPENDITURE ACCOUNT

October 31, 1960

1959		EXPENDITURE						£ s. d.		£ s. d.	
£	s.	d.									
			GENERAL PRINTING:								
29	7	9	Members' Cards	...	...	...	...	30	12	0
75	17	4	Circulars	...	...	...	...	69	2	9
<hr/>								<hr/>		99 14 9	
105	5	1	<i>The Naturalist:</i>								
387	19	1	Members' and Exchanged Copies	...	...	...	...	438	10	0
5	7	8	Extra Pages and Illustrations	...	...	...	...	12	6	3
6	0	0	Editor's Expenses	...	...	...	...	3	14	6
<hr/>								<hr/>		454 10 9	
399	6	9									
16	16	7	Officers' Expenses	...	...	...	...		20	5 1
9	12	0	Sundry Expenses	...	...	...	...		15	11 5
—			Depreciation of Investments	...	...	...	...		60	0 0
61	19	2	Excess Income over Expenditure	...	...	...	...		51	12 6
<hr/>								<hr/>		£701 14 6	
<hr/>								<hr/>			
£592	19	7									

October 31, 1960

1959		EXPENDITURE						£ s. d.		£ s. d.	
£	s.	d.									
			INVESTMENTS (Nominal Value):								
			Booth Fund—3½% Conversion Stock	...	...	...	...	100	0	0
			Cheeseman Fund—3½% War Stock	...	...	...	...	100	0	0
			Nicholas Fund—3% British Transport	...	...	...	...	100	0	0
			General Fund—4% Consols (Bank of England)	...	...	...	...	200	0	0
			" " 4% Consols (P.O.)	...	...	...	...	159	10	11
659	10	11						659	10	11	
175	0	0	Less Reserve for Depreciation	...	...	...	...	235	0	0
<hr/>								<hr/>		*424 10 11	
484	10	11									
—			Deposit Account—York County Savings Bank (inc. Interest accrued)	...	...	...	...	614	3	6
397	2	11	" " Westminster Bank	...	...	...	...	—
126	4	11	Current Account—Westminster Bank	...	...	...	...	305	15	11
—			Cash in Hand	...	...	...	...	0	15	1
21	0	0	Subscriptions due	...	...	...	...	9	5	0
12	3	2	Loan to Mycological Fund	...	...	...	...	—

*NOTE: Market Value £429 approx.

We have audited the foregoing Income and Expenditure Account and Balance Sheet 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.

(Signed) Whitham, Smith, Mitchell & Co. C.A.

£1041 1 11

£1354 10 5

1961 January-March



YORKSHIRE

INCOME AND
Year ending

1959	INCOME	£ s. d.	£ s. d.
£ s. d.			548 17 6
507 11 4	Subscriptions		15 0 8
7 9 6	Sale of Mycological Papers, Russula, etc.		4 0 6
5 11 2	Sale of Other Publications		21 7 6
21 7 6	Interest on Investments		18 15 10
7 1 10	Bank Interest		36 4 3
43 18 3	Donations and Tax thereon		
---	Tax on Covanented Subscriptions	207 8 3	
---	Less Reserve	150 0 0	
			57 8 3
			<u>£701 14 6</u>
£582 19 7			

BALANCE SHEET

1959		£ s. d.	£ s. d.
£ s. d.			
100 0 0	ACCUMULATED FUNDS—GENERAL:		
100 0 0	Booth Fund	100 0 0	
250 0 0	Cheeseman Fund	250 0 0	
100 0 0	R. C. Fowler-Jones Legacy	100 0 0	
---	E. G. Bayford		550 0 0
550 0 0			
---	MYCOLOGICAL FUND:		
---	Sales—Cortinarius	22 9 0	
---	Less Loan to General Fund repaid	12 3 2	
			10 5 10
---	ORTHOLOGICAL FUND:		
---	Balance brought forward	100 0 0	
---	Donation	25 0 0	
---	Interest from Investment	3 0 0	
---	Less Expenditure	128 0 0	
100 0 0		28 0 0	100 0 0
---	LIFE MEMBERS' ACCOUNT:		
---	Balance brought forward	165 0 0	
---	Less Transfer to Subscriptions	15 0 0	
165 0 0			150 0 0
---	Reserve for Contingencies		15 0 0
15 15 0	Suspense Account		15 15 0
39 0 0	Subscriptions in advance		21 2 0
0 9 4	Sundry Creditors		134 17 6
---	INCOME AND EXPENDITURE ACCOUNT:		
---	Balance brought forward	170 17 7	
---	Add Excess Income over Expenditure	51 12 6	
170 17 7			222 10 1
£1041 1 11			<u>£1354 10 5</u>

NATURALISTS' UNION

EXPENDITURE ACCOUNT
October 31, 1960

1959	EXPENDITURE	£ s. d.	£ s. d.
£ s. d.			
20 7 9	GENERAL PRINTING:		
75 17 4	Members' Cards	30 12 0	
---	Circulars	69 2 9	
105 5 1			99 14 9
---	<i>The Naturalist:</i>		
387 19 1	Members' and Exchanged Copies	438 10 0	
5 7 8	Extra Pages and Illustrations	12 6 3	
0 0 0	Editor's Expenses	3 14 6	
			454 10 9
399 6 9	Officers' Expenses	20 5 1	
9 12 0	Sundry Expenses	15 11 5	
---	Depreciation of Investments	60 0 0	
61 19 2	Excess Income over Expenditure	51 12 6	
£592 19 7			<u>£701 14 6</u>

October 31, 1960

1959		£ s. d.	£ s. d.
£ s. d.			
---	INVESTMENTS (Nominal Value):		
---	Booth Fund—3½% Conversion Stock	100 0 0	
---	Cheeseman Fund—3½% War Stock	100 0 0	
---	Nicholas Fund—3% British Transport	100 0 0	
---	General Fund—4% Consols (Bank of England)	200 0 0	
---	" " 4% Consols (P.O.)	159 10 11	
559 10 11		659 10 11	
175 0 0	Less Reserve for Depreciation	235 0 0	
384 10 11			424 10 11
---	Deposit Account—York County Savings Bank (inc. Interest accrued)	614 3 6	
97 2 11	" " Westminster Bank	100 0 0	
129 4 11	Current Account—Westminster Bank	305 15 11	
---	Cash in Hand	0 15 1	
21 0 0	Subscriptions due	9 5 0	
12 3 2	Loan to Mycological Fund	---	

*NOTE: Market Value £429 approx.

We have audited the foregoing Income and Expenditure Account and Balance Sheet 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.

(Signed) Whitham, Smith, Mitchell & Co. C.A.

£1041 1 11

£1354 10 5

Trichocolea tomentella (Ehr.) Dum. (64) Tarn Fen.

Solenostoma sphaeocarpum (Hook.) Steph. (62) Baysdale; Y.N.U. Excursion.

Mylia anomala (Hook.) S. F. Gray (64) Brimham Moor; F.E.B. (64) Tarn Moss; Tarn Fen.

Cephalozia media Lindb. (64) Tarn Moss.

Cladodiella fluitans (Nees) Buch (64) Tarn Moss; Spiggot Hill peat pools.

Scapania curta (Mart.) Dum. (64) Rare on walls near Tarn.

* New to Vice-County.

Mycology (Miss J. Grainger): The spring foray broke new ground at Holme-on-Spalding Moor. Woodlands nearby provided a good gathering of morels. Londesborough Park, Goodmanham, Melbourne and Pocklington Canal were visited. On Saturday evening Mr. Roy Watling read a paper on 'Fungal Succession on Kestrel Pellets' in which the results were described of his numerous painstaking observations.

In September, Thornton Dale was again visited for the autumn foray. Kingthorpe and Castle Howard woodlands proved somewhat disappointing but some new and interesting ground was visited at Kirkham Abbey. The Chairman's Address dealt with modern views on the taxonomy of the Agarics as expressed in the recently-published check list of British species issued by the British Mycological Society, and their bearing on the field work done at forays. Mr. Orton followed up his talk on the following day with comments upon the contents of several collecting baskets.

Reports on the results of the forays will appear in due course.

On October 22nd a day meeting was held in the Meltham area.

ORNITHOLOGICAL SECTION MEETING, November, 1960

An open meeting was held in the House of Laymen, St. William's College, York, on Saturday, November 12th, in conjunction with the York and District Field Naturalists' Society. Atholl Wallis, who took the chair, thanked the York Society and its officers for making the local arrangements and welcomed, particularly, the atmosphere of such a historic meeting place.

Four papers were given in the afternoon when about 120 people were present. Dr. M. N. Rankin of Hemsworth gave a summary of his observations on the roosting habits of Tree Creepers. Most of his work had been done in Ireland where the species had quickly adopted introduced *Sequoia* for roosting. A. F. G. Walker of Harrogate drew attention to the comparative dearth of reports on migration at Flamborough Head in recent times. He demonstrated by his own observations and those of H. O. Bunce, for the past few autumns, that it is still a station meriting continuous watch during the migration seasons. Appropriately, the following paper by P. J. Stead of Middlesbrough dealt with the subject of migration at another point on the coast and again the speaker stressed the need for observations at various places on the coast for comparison with the records from Spurn. He described in particular the spectacular immigration of birds in the Teesmouth area in mid-September, 1960.

Finally, J. R. Mather of Knaresborough, in his own inimitable way, gave a concise but comprehensive account of his work on Tree Sparrows at Knaresborough Sewage Farm. By providing nesting boxes, he had not only greatly increased the breeding population but had also created opportunities for studying aspects of the breeding habits of the species. There were questions and discussion on each of the papers. During the tea interval members welcomed the opportunity of examining some of the fine bird paintings of K. Dawson of the Leeds and District Bird Watchers' Club.

Over 200 were present for the evening session when the film 'Edge of Britain' was shown. This was a record of a visit to Shetland and included sequences of Gannets on Noss and of Cormorants at Hermaness. The main part of the film was devoted to Britain's loneliest inhabited island, showing something of the way of life of the inhabitants of Foula, of the magnificent cliff scenery, and more particularly of the bird-life of the island. Eiders, Fulmars, Arctic Terns, Snipe, Black Guillemots, Puffins, Red-throated Divers, etc., all found a place in the film. The outstanding sequences were undoubtedly those dealing with Great and Arctic Skuas. Their flight, aggressive behaviour and injury feigning were vividly portrayed and excellent recordings of the birds' voices added to the completeness of this fine film.

JOINT MEETINGS OF THE VERTEBRATE SECTIONS IN 1960

SOME 150 members and associates attended the meeting in the University of Leeds on March 19th under the chairmanship of Mr. John Cudworth. During the afternoon the 1959 Annual Report of the Spurn Bird Observatory Committee was presented by the Hon. Secretary, Mr. George Ainsworth, and the Ornithological Report for 1959 was given by Mr. Ralph Chislett, who announced that it would, in future, be prepared by five vice-county recorders. Mr. Alfred Hazelwood proposed a vote of thanks to Mr. Chislett for his services as Editor of the County Report for the past twenty years.

The evening meeting was devoted entirely to an address by Mr. Kenneth Williamson, Migration Officer to the British Trust for Ornithology, who discussed the development of work at British bird observatories.

The October meeting on the 8th received the Annual Report of the Mammals Section from Mrs. E. Hazelwood and the interim accounts from Spurn Bird Observatory and from the Ornithological Section.

In the evening, Dr. R. J. Elliott of the Nature Conservancy gave an illustrated talk on 'Badgers and Badger Watching'. The animals' behaviour and habitats were discussed in detail and the speaker suggested lines on which amateurs might work. The second speaker was Mr. J. A. G. Barnes, the B.T.O. representative for Westmorland and Furness, who gave an illustrated lecture on 'The Birds of Morecambe Bay'. While admitting that the emphasis often lay on quantity rather than quality, the speaker must have encouraged members to visit the area at suitable times of season and tide. He also discussed the B.T.O. enquiry into the wintering habits of the Lesser Black-backed Gull.

Lt.-Col. H. G. Brownlow was elected Chairman of joint meetings for 1961.

A. H. B. LEE, *Hon. Convener.*

CORRESPONDENCE

To the Editor of *The Naturalist*.

DEAR SIR,

A Committee has recently been set up to study the effects on wild life of toxic sprays and seed-dressings. There have already been some quite serious consequences of such agricultural activity. Predatory birds and animals which have picked up poisoned prey are not least affected, and in some areas Kestrels, Sparrow-Hawks and Owls are becoming quite rare.

I shall be glad if members of the Y.N.U. will notify me (or write direct to the R.S.P.B., 25 Eccleston Square, S.W.1) if any suspected poisoning of birds comes to their notice.

Specimens which are thought to be victims of chemicals should be sent to the Veterinary Laboratory, Eskgrove, Lasswade, Midlothian (by letter post in an impermeable tin marked 'Pathological Specimen') with a request for the poison to be identified if at all possible. The sender's name and address should be included, as also the date and place where the specimen was found.

Yours,

R. F. DICKENS,

Hon. Sec., Ornithological Section.

Introduction to Entomology, by R. Jeannel, translated by H. Oldroyd.

Pp. 344 with 31 plates, 10 in colour. Hutchinson & Co., London, 1960. 63/-.

There is neither author's nor translator's preface to indicate the kind of public for whom this book is intended. It is in fact a compilation from the very large textbook, *Traité de Zoologie*, ed. Grassi, Vol. IX, by R. Jeannel. It has three parts of about equal length, one on anatomy and classification, one on physiology and behaviour, and one on palaeontology. The space allotted to the last section could be regarded as excessive in view of the speculative character of the subject, but since the information contained is not otherwise generally available it may quite easily be the book's greatest attraction. In the other sections the basic information is admirably displayed in small space but its application to the various orders scarcely attempted. The most surprising feature is its extremely pleasant reading, on this score writer and translator have done very well indeed. There are, however, rather too many misprints, particularly in Part II.

It is eminently a book to read and can be recommended to amateur and professional alike but as a book of reference it cannot really compete with the standard English textbooks.

H.H.

Plant Morphogenesis, by **Edmund W. Sinnott**. Pp. x + 550 with 208 text figures. McGraw-Hill Book Company, Inc., 1960. 97/-.

The formulation and solution of the complex problems inherent in the co-ordination of metabolic and developmental activities which determine mature form and structure are amongst the most intractable in biology. Since it touches nearly all other fields of biological study, the scope of plant morphogenesis is also extremely wide, and no previous attempt has been made to give a comprehensive survey of the subject and of the most important contributions that have been made towards a solution of developmental problems.

The task of organising the descriptive facts, the problems posed and the relevant experimental data bearing on all the composite aspects of plant morphogenesis is itself a difficult one. Professor Sinnott's method is to divide the subject into three parts. The first part deals with plant growth, with particular emphasis on cellular and meristematic growth activity. The second describes the distinctive phenomena of morphogenesis in plants—correlation, polarity, symmetry, differentiation, regeneration, tissue mixtures and abnormal growths—and the more important studies that have been made in them. In the third section the morphogenetic factors, physical, chemical and genetic, and their causal rôle in development are discussed. A concluding chapter deals with the basic problem of biological organisation, and there is a full bibliography which runs to sixty-five pages.

This is a valuable compilation which will serve as a standard reference book to the subject for many years to come. It is a fitting consummation to Professor Sinnott's long preoccupation with problems in part of the great field which he has now analysed and systematised.

W.A.S.

Scot Head Island, edited by **A. J. Steers**. Pp. 269, 57 text-figures, 31 tables and 30 plates. Heffer, Cambridge, 1960. 50/-.

This book was first published in 1934. In this 1960 edition most of the chapters are entirely new and the rest largely rewritten to bring the matter up to date. The plates are also all new, many maps and diagrams have been added and aerial photographs of the whole area are keyed to a large folding map of the island. Although of primary interest to those who know the island, the value of this book to the general reader will be its wealth of information on maritime ecology in general. This is especially true of the chapters on Physiography and Evolution, Plant Ecology, and Maritime Invertebrate Fauna, though in the latter two the detailed data at times makes somewhat tedious reading. Again the section on Pollen Analysis has much general information in addition to the rather inconclusive results from the local deposits. The chapters on lichens and fungi are little more than species lists but that dealing with birds is of considerable interest with a style which makes for very enjoyable reading. A useful account of the bryophytes is given. At 50/- this is an expensive book but there can be few others which contain such a wide range of information on maritime ecology.

D.D.B.

Birds of the West Indies, by **James Bond**. Pp. 256 with 8 coloured plates and 186 text-figures. Collins, London, 1960. 35/-.

This is another of the Collins' Field Guides, and is the first complete account of the avifauna of the entire West Indian Archipelago. Trinidad and Tobago are excluded from the faunal region and are to be dealt with in a forthcoming work.

Since the avifauna of the West Indies is predominantly that of tropical N. America, it combines much that is exotic with a lot that is familiar and such species as the Osprey, Moorhen, Merlin and Sandwich Tern are as much at home there as here. The visiting ornithologist from Europe will start from a familiar base.

The large and scattered islands have provided many clear-cut cases of racial segregation especially among the parrots but these are all accorded specific rank in a treatment which is binomial throughout. It is stimulating to read of some species that their nidification is unknown and of the author's belief that there is still a colony of Black-Capped Petrels to be discovered on Hispaniola.

The coloured plates by Don Eckelberry are entirely competent and the very numerous text-figures by Earl Poole emphasise the salient points where confusion is possible. A list of vagrants so infrequent as not otherwise to receive mention concludes a work which will slip neatly into the pocket of anyone with the inclination and the opportunity to do his bird-watching so far afield.

A.H.

Oysters, by **C. M. Yonge**. Pp. xiv + 209 with 31 plates and 72 text figures. Collins *New Naturalist* Special Volume. 21/-.

The work of applied and pure biologists is often far apart but in the study of oysters it finds common ground, and the results, as presented in this book, contain much to interest both biological and general readers. A shell fish prized since pre-historic times, the oyster was first exploited and later 'cultivated', and to be successful in the latter has necessitated knowledge of the conditions affecting feeding and rate of growth, maturation and discharge of the gonads, the settlement, feeding and survival of the spat. When, as in Britain, the native stock has declined through natural causes or overfishing, restocking with other species has brought its own problems not least of which has been the disastrous introduction of pests which lack a natural control.

As well as the practical problems and methods of oyster culture throughout the ages and in many lands, we meet those more detailed aspects of biology and structure which ultimately explain the success or failure of particular species or culture methods. Thus the size and relative positions of the palps, gills and mantle determine the proximity to each other of the incoming food path and the outgoing path of pseudofaeces, and differences between species in these respects account ultimately for the greater success of *Crassostrea* compared with *Ostrea* in turbid waters. But oysters are seen here not only as valued shellfish, but also as extensively studied bivalve molluscs, and excellent accounts are given of the structure and functioning of the animal and its shell, the whole in that clear and readable style which we have learnt to expect from Professor Yonge.

J.R.L.

A Biography of the Sea, by **Richard Carrington**. Pp. xvi + 268 with 32 plates. Chatto & Windus. 30/-.

This latest book by Mr. Carrington really attempts too much and being on a 'popular science' level will interest, bore or irritate according to one's knowledge of the subject and the value one attaches to this type of treatment. It is divided into three parts, the first of which deals with the origin of the seas and their physical and chemical characteristics, and with tides, currents and waves. Part Two is biological, with descriptions of the principal types of marine organisms (a figure of 'some characteristic marine invertebrates' should not have included a marine insect) and of the main features of populations from the various habitats of the sea: the surface waters, the shore, the abyss, rock and sand, etc. There is also an evolutionary 'journey through time'. In the last part, 'Man and the Sea', there are chapters telling of early exploration, scientific investigation, fisheries, and the part played by the sea in early religions and mythology and its influence upon art, music and literature.

Treatment is inevitably uneven and criticism of the subject matter included or omitted can always be made of such a book. One serious omission, which could have been treated at an elementary level, is the failure to show how the productivity of the seas—from the highest points of the food chains down through the herbivorous plankton to the phytoplankton—is related to the seasonal or regional differences in the physical environment and to the re-circulation of nutrient salts. Similarly there is little mention of coral reefs and their formation, surely a topic to interest all general readers.

On the other hand, a lot of information is given in a very readable fashion, and even if one has reservations about the contents the book will probably stimulate senior pupils and general readers to turn to the ample bibliography in search of further reading.

J.R.L.

Bracken Horse, by **Gareth Dale**. Pp. 159. Lutterworth Press, 1960. 15/-.

This account of the author's efforts to reclaim single-handed a derelict Welsh hill farm makes enjoyable reading. Horses are Mr. Dale's chief passion, and the interest of the book centres mainly round his exciting and often perilous attempts to break in his wild, mountain-bred horses, including a spirited stallion. Mr. Dale evidently loves this remote hill country, but he is no naturalist and has nothing of interest or significance to say about the wild denizens of his farm. No doubt running a farm single-handed leaves one with little free time to stand and stare.

C.S.

Wideawake Island, by **Bernard Stonehouse**. Pp. 224 with 36 photographs. Hutchinson, London. 35/-.

In 1959 the British Ornithologists' Union celebrated its centenary and in furtherance of its celebrations organised and financed two expeditions to elucidate problems of particular interest. One of these was to Ascension Island in the South Atlantic, primarily to investigate the cycle of the Wideawake Fair, the name given to the breeding of the Wideawake tern. This takes place every nine months and this odd periodicity has been the cause of much speculation.

The author was chosen to lead this expedition on account of his extensive experience with antarctic bird populations and the book is his account of the island and of the day-to-day activities of the group which investigated it.

There is a brief history of the island which attained a temporary importance as a base for a marine garrison during the exile of Napoleon Bonaparte and now maintains a missile tracking base in a chain of stations from Cape Canaveral. The rest of the book deals with the work of the mission and to echo the President of the B.O.U., who supplies a foreword, it is a 'lively and light-hearted account'.

Dr. Stonehouse is too old a hand to put forward any conclusions before a full consideration of the mass of data accumulated by the expedition, the results of which are eagerly awaited, but as an account of exploration and adventure in this somewhat prosaic century, his story makes engrossing reading and a stimulating overture to the fuller exposition to follow.

A.H.

Saving the Game, by **Anthony Cullen** and **Sydney Downey**. Pp. 224 with 31 photographs. Jarrolds, London, 1960. 25/-.

One of the authors of this depressing book is a journalist, the other a professional hunter, and both are Honorary Game Wardens for Kenya. Neither are sentimentalists and their plain message is that short of a miracle there is little hope of saving anything of the wild life of an area which only a decade ago aroused no such considerations.

Ivory and meat-poaching, especially the latter, the competition for grazing by the enormous herds of prestige cattle maintained by the Masai and reduction in the size of the absolute reserves, these are the main causes of this alarming state of affairs. The increased native population, always protein hungry, seems to exercise the greatest pressure and is restrained neither by ethical nor sentimental considerations. There is no indication as yet that the African administrators of the immediate future regard wild animals as a positive asset and time is probably too short to initiate any measures of game husbandry in time to save some of the most imminently threatened species such as lion and rhinoceros.

The authors feel that the only available weapon is 'mass public opinion and outrage on a world-wide scale' and it is distressing to admit that these voices from the wilderness are unlikely to penetrate above the hubbub of political manoeuvre and the universal anthem of 'More for Me'.

A.H.

The Female of the Species, by **R. H. Smythe**. Pp. 144, illus. in text. Country Life, London, 1960. 21/-.

Mr. Smythe is a veterinary surgeon and his approach to the rôle of the female in the animal kingdom is an almost strictly mechanistic one. He sees behavioural patterns as the end product of a cycle triggered off in the pituitary gland as a photo-sensitive response and the glamour of motherhood is appropriately reduced to a series of responses to a pattern of stimuli. Thus, there is no bond between a cow and the calf which it has borne but has not suckled and thus the bitch will ignore or even reject any of her offspring which, in sickness, give off some other odour than that which she is inherently conditioned to accept.

Although a commendable work, it may well fall between the stools of materials and treatment since to a ready-made audience most of the facts adduced will be fairly familiar and to those who prefer Nature clad in at least a romantic diaphany, his matter-of-fact style will appear pragmatic. It would most usefully be read by those whose concern is with the human female animal whose vagaries of behaviour may often stem from the confusion or the cynical manipulation by society of the stimuli which govern their behavioural well-being.

A.H.

A Book of Dolphins, by **Antony Alpers**. Pp. 148 with 20 plates. John Murray, London, 1960. 15/-.

In 1956, off Opononi beach in New Zealand, there appeared a dolphin which not only suffered human company but actually sought association with children, permitting itself to be handled and petted. There were in fact the beginnings of what might have been a long and friendly contact but for the accidental death of the animal by stranding on a reef.

It was these circumstances which prompted the author to look back over some of the earlier records of man-dolphin association including those of Greek mythology in the light of what has been learned of the intelligence of the smaller cetaceans in the Marine Studios aquarium in Florida where it is apparent that the dolphins have invented games for the humans to play. The story of Pelorus Jack is recounted in full and there are some observations on ways of saving stranded dolphins. Photographs from the Marine Studios include one of the birth of a dolphin and there is a series showing the events at Opononi. Altogether a charming little book.

E.H.

Tracks and Signs of British Animals, by **Alfred Leutscher**. Pp. 252 with 5 photographs and numerous drawings. Cleaver-Hume Press, London, 1960. 16/-.

This compact little manual is a comprehensive account of the traces left by the activities of British mammals, reptiles, amphibians and some larger birds. Tracks, droppings, smears, discarded foodstuffs are all described and illustrated, accompanied by condensed accounts of appearance and habits which are up-to-date and omit nothing of moment. All the mammals are illustrated by drawings of their feet and of their tracks at various gaits. The domestic forms are included.

Among the birds, the author is not so much at home and his accounts include errors of fact and of transcription. There is little excuse for mis-spelling scientific names especially when their derivation is explained, but these are minor blemishes in a devoted work which will foster the questing child and inculcate habits of observation which are not elicited by the rarity cult. Definitely recommended to the young and young-at-heart.

E.H.

Wild Animals and Their Ways, by **David Stephen**. Pp. 96, freely illustrated in colour by Nina Scott Langley. Collins, London, 1960. 21/-.

Although by its dust jacket and format this would appear to be a work devised primarily for children, the subject matter, in a discursive way, is such as to provide a primer in British Mammalogy for the enthusiastic adolescent or even the enquiring adult. Although it contains much that is familiar, even to that wretched pigmy shrew on Ben Nevis which has haunted the literature for half a century, the author draws considerably on his own experience of wild and captive mammals so that his accounts are often refreshingly first hand.

Mrs. Scott Langley's drawings are competent and evocative, especially in black-and-white, and she has a good perception of bone and balance so that her subjects live and move.

It is a pity that on the bookseller's counter one would be inclined to dismiss a competent work as just another knock-up for the kiddies.

E.H.

Man and Animal, by **Hermann Poppelbaum**. Second, revised, edition. Translated from the sixth German edition. Edited by Owen Barfield. Anthroposophical Publishing Co., London, 1960. 168 pp. 21/-.

This is a work whose careless charm entirely defies criticism in the accepted sense of the word because it delineates a faith. Deriving from the utterances of one Rudolph Steiner, only its title brings it within the purview of this magazine unless perchance you are prepared to concede that the higher animals have evolved from man and that 'The development of the human embryonic sheaths and appendages is a reproduction of cosmic events in a material medium.' These and many more striking revelations are to be obtained from the study of Anthroposophy of which Rudolph Steiner was the Prophet. 'It is based on his own insight into processes and things of the world inaccessible to our ordinary senses' and you can't argue with that—or care very much either.

A.H.

The Amateur Naturalist's Handbook, by **Vinson Brown**. Pp. 406 with over 200 illustrations from line drawings. Faber & Faber. 25/-.

Following a three-chapter introduction this book is divided into four sections: The Beginning Naturalist, Student Naturalist, Advanced Naturalist, and Becoming an Explorer-Naturalist. Since animal and plant life, geology and climate are dealt with in chapters in each section, some duplication and repetition are inevitable.

'It is a day just at the beginning of summer, somewhere in England,' the book begins. One has not to go far, however, to be constantly reminded that the scene was originally set in America. There are 'small clumps of forest' among our rich meadows. The naturalist carries, not specimen tubes, but 'vials'. He applies for a permit to shoot study skins to his 'local fish and game commission'. The pellets of the screech owl, the beginner is told, are smaller and rounder than those of 'the great horned owl'.

The kind of information which should be on the label has been easy to alter in the text, but to avoid the necessity for new blocks the accompanying illustrations show a Californian animal and flower. Such examples are not the best to place before the beginning British naturalist.

Hurried adaptation and lack of proper revision are apparent, too, in wrong references. On p. 43 we are referred to Chapter XI for a full explanation of the differences between animals and plants, only to find that Chapter XI deals with the study of rocks and minerals. 'How to trap mammals and birds alive will be described in Chapter X' we are told, but find that this is one on Plant Study. These are not the only examples. The Beginning Naturalist will also find it inconvenient to judge bird size by comparison with Quail, or mammals with *deer*. Nor will he find it very comforting on looking at the bibliography to find, among other things, that for two out of three books on nature photography and all on taxidermy he must go to America.

The Amateur Naturalist's Handbook has much to offer. It is a pity that it does not do it more graciously.

R.F.D.

Penguin Island, by **Cherry Kearton**. Pp. 112 with frontispiece and 16 photographs, also line drawings by Mary Krishna. Hutchinson & Co. Ltd. 15/-.

Only the elderly will remember, with gratitude, the pioneering work in bird photography carried out by the two Yorkshire-born brothers, Richard and Cherry Kearton. At the turn of the century and for a decade or two thereafter, their work was unrivalled. This book describes a visit, extending over four months, paid by Cherry Kearton and his wife to Penguin Island in the South Atlantic. To this island, with an area of a few square miles, great numbers of Blackfooted Penguins come ashore to nest, twice a year.

This is not a scientific work but one in which the author describes, with charm and accuracy, the habits, peculiarities and social adjustments of a vast colony of these most attractive birds. It will be read with pleasure by nature lovers of all ages but its particular appeal will be to the young naturalist.

E.W.T.

New Photographs 1961: A Selection of the World's Finest Photographs. Published for *Amateur Photographer* on September 24th, 1960, by Iliffe and Sons Ltd. Pp. 136 including 104 plates, 8 in full colour. $10\frac{3}{4} \times 8\frac{1}{2}$. 21/- net (postage 1/9).

The change in the title of this long-established annual reflects a change in outlook. Work suitable for inclusion in *Photograms* has traditionally been limited to the field of pictorial photography in which aesthetic pleasure and emotional appeal stemming from treatment rather than subject has been the criterion of acceptability. Applied photography in which practical values and subject matter are of primary importance have hitherto been taboo, though the boundaries between applied and pictorial photography—as in portraiture—are ill-defined. This issue departs from tradition in giving recognition to less conventional aspects of pictorial photography and the quality and interest of the pictures are such that only the most rigid conservatives are likely to resent the broadening of outlook which the change embodies. The President of the Royal Photographic Society, Mr. John Bardsley, contributes a critical article on 'The Changing Outlook in Pictorial Photography', and the inclusion of technical details against each plate and the form of the commentary on the plates are the other new features of an issue which gains in interest through the widening of its appeal.

W.A.S.

By C. L. DUDDINGTON, M.A., Ph.D., F.L.S.

This is a book for science students and also for those whose hobbies, and these are many, include the use of the microscope. It is essentially practical and deals with the uses of the manipulation of the instrument. The principles are also explained in Part I, and in Part II some of the techniques used in preparing specimens are discussed. Illustrated with photographs and line drawings. 30/- net.

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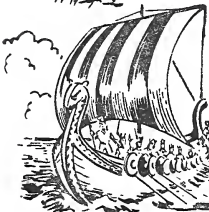
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The NATURALIST

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Edited by

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

with the assistance as referees in special departments of

Ralph Chislett, F.R.P.S., M.B.O.U.

Mrs. A. Hazelwood.

W. D. Hincks, D.Sc., F.R.E.S.

Mrs. Elsie M. Morehouse.

W. H. Pearsall, D.Sc., F.R.S., F.L.S.

E. W. Taylor, C.B.E., D.Sc., F.R.S.

H. C. Versey, D.Sc., F.G.S.



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ENTOMOLOGICAL SECTION: COLEOPTERA AND OTHER ORDERS COMMITTEES

There will be a meeting in the Zoology Department, Leeds University, at 2-30 p.m. on Saturday, May 6th. A short paper will be read by Mr. K. G. Payne on "Insects and Flowers" and there will be an exhibition of specimens to which members are asked to contribute.

A field meeting will be held at Birkham Wood, Knaresborough on Sunday, May 7th. A bus leaves Leeds at 10-45, Wetherby at 11-23. Alight at Grimbold Bridge. The wood is half a mile upstream and members can meet at the entrance to the wood.

NOTICE.

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 :

The Entomologists' Monthly Magazine.

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 Lactarius*, and *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*.

H.R.H. The Princess Royal

H.R.H. The Princess Royal has graciously consented to become Patron of the Yorkshire Naturalists' Union. Her long residence in the heart of the county, her wide and active interest in its educational and cultural life and her concern for so many aspects of the welfare of its people and institutions have won for her a special place in the esteem of Yorkshire people. Her interest in garden flowers is well known and the preservation of the countryside and its wild life generally is not least amongst the subjects which have her sympathetic support. Yorkshire naturalists will be proud of the honour she has done them in becoming Patron of the Union which represents natural history interests throughout the length and breadth of the county.

THE ECOLOGY OF CROWBERRY (*EMPETRUM NIGRUM*) ON ILKLEY MOOR 1959-1960

Edited by Mary Dalby for the Wharfedale Naturalists' Society

INTRODUCTION.

The phenomenal spread of crowberry (*Empetrum nigrum*) on Ilkley Moor aroused the interest of members of the Wharfedale Naturalists' Society but, after extensive reading and enquiries, it was found that little had been published on the ecology of the plant. This provided a challenge, and we set out to discover as much as we could about the crowberry plant as it occurred on our moor. It must be stressed that this is only a part of the general survey of Ilkley Moor now being carried out by the Wharfedale Naturalists' Society.

HISTORY.

Crowberry flourished in the late glacial and post-glacial flora of 12,000 to 15,000 years ago, as is proved by pollen analyses and identification of twigs, fruits, etc., and was apparently more abundant in earlier post-glacial times than it is today. Now, apart from scattered localities, it occurs chiefly in the north and west of the British Isles, north of a line running from Scarborough to Bristol, so that we are near the southern boundary of its British distribution.

HABITAT.

Apart from the essential of a base-deficient soil crowberry appears to be extremely catholic in its preferences. On the moor it will grow anywhere from deep peat among *Sphagnum*—though here it is stunted as it prefers a drier habitat—to deep or shallow clay soils. It also grows on eroding peat, especially where there are irregularities of ground and better drainage.

Crowberry appears to be tolerant to atmospheric pollution and any increase of soil acidity which might be caused by sulphur dioxide in the atmosphere being returned to the ground in solution as sulphuric acid, would have no adverse effects on account of its preference for acid soil conditions.

ROOT SYSTEM.

The young seedling sends down an anchoring tap root which as the plant gets older becomes woody and penetrates the mat of cottongrass or mat-grass roots with which it grows. The plant is prostrate, and if unimpeded will send out shoots in all directions, forming a circular or oval tuft. As the shoots grow they root into the peat and the plant forms much debris into which it will continue to root. The growth rate of isolated tufts in bare peat is probably retarded by the fact that the wind

blows up the tufts from the edges, loosening and drying the delicate feeding roots on the stems which must have moisture and shelter when first developing. Later they are brown and matted into a fibrous mass which can be torn off shallow soil but will bring the peat up with it. This production of its own debris, which may be up to a foot in depth, enables the plant to spread over bare boulders. The general picture, therefore, of an established plant is of a mass of fibrous roots on the surface gradually smothering surrounding vegetation by the production of debris, and deep roots going down to the deeper levels. In many places on the moor crowberry will grow on very shallow soil of only a few inches, depending entirely on its surface roots.

VEGETATIVE SPREAD.

There is extensive rooting from stems as described above and in the case of an unimpeded plant shoot growth is as much as twelve inches in one season. A first year seedling grows so as to form a roughly circular mat; the next year the shoots divide at the end into a fan of new shoots each of which may divide again the following year. The ability of the plant to cover bare peat and the speed with which the islands of individual plants coalesce after about the third or fourth year is phenomenal, provided there is reasonable shelter from the wind. Some of the branches of established plants may grow to great lengths—one overhanging a bank in Spicey Gill measured 58 inches. The main period of growth is in early summer but growth continues all through the summer.

COMMUNITIES.

1. *Pure stand of crowberry.*—There are extensive areas on the moor where crowberry is completely dominant, accompanied only by small stunted plants of bilberry (*Vaccinium myrtillus*), wavy hair grass (*Deschampsia flexuosa*), matgrass (*Nardus stricta*) and heath rush (*Juncus squarrosus*), with the mosses *Dicranella heteromalla* and *Campylopus* spp. and the liverwort *Barbilophozia foerkii*. Where these areas are intersected by footpaths crowberry is absent on the paths as it cannot tolerate trampling and its place is taken by matgrass or heath rush.

2. *Colonising bare peat.*—Where peat is eroding or has been extensively burnt, crowberry seedlings establish themselves on the drier parts, forming small islands. These islands of plants finally join up and form a closed community. Accompanying species are cottongrass (*Eriophorum angustifolium*) on the damper parts, small heather (*Calluna vulgaris*) plants which get rapidly grazed off, bilberry, and the mosses *Campylopus flexuosus*, *C. pyriformis* and *Dicranella heteromalla*.

3. *Crowberry with bracken.*—In competition with bracken, depth of soil plays an important part. Bracken with its deep rhizomes requires a reasonable depth of soil—on the moor it is generally nine inches or more where bracken is abundant—whereas crowberry, being shallow rooted, can colonise any stony place, steep slope, or where the soil is shallow, and there will compete successfully. On deep soil where there is shelter the bracken dominates, but crowberry can tolerate exposed places where the bracken cannot grow, and for this reason there is often a hard line where bracken ceases and crowberry begins at the top of sheltered slopes, even though the soil is of equal depth and texture on either side of the dividing line.

4. *Crowberry with cottongrass.*—Where the peat is drying out but cottongrass is abundant, crowberry appears to be advancing. This is especially noticeable with the hare's tail cottongrass (*E. vaginatum*), where the dense tufts are crowned with crowberry which trails down over the tussocks and spreads over the wetter areas, which in these bogs are usually covered with the moss *Drepanocladus fluitans*. Spread appears in most cases to take place from the edges of these bogs from the higher ground, which is usually well colonised by crowberry, but advantage is taken of any raised ground in the centre of the bog. Here the deeper roots of the crowberry penetrate the dense tussock of the cottongrass. With the common cottongrass (*E. angustifolium*) and its less tufted growth crowberry grows intertwined, accompanied by the cross-leaved heath (*Erica tetralix*). This association may have been encouraged by the very dry summer of 1959, and a series of wet summers might cause its regression.

5. *Crowberry with bilberry and wavy hair grass.*—These communities are generally on the drier places and where observations have been carried out it is evident that the crowberry is rapidly ousting the bilberry. 'Baskets of bilberries' reported by old inhabitants even up to the time of the last war are now a thing of the past. The

bilberry does flower and there are quite a number of fruits, but not in abundance. Wherever accessible bilberry is heavily grazed, so that the rapid vegetative growth of the crowberry and the subsequent accumulation of debris appears to smother the bilberry. The mosses *Dicranum scoparium* and *Barbilophozia floekii* are found in association.

6. *Crowberry with heather*.—In the areas of the moor where heather remains the plants are for the most part stunted and small, rarely reaching more than 2 or 3 inches in height so that the more sturdy crowberry can easily overshadow them. Heather is extensively grazed and because the sheep eat off the growing shoots it remains stunted. It is noticeable that plants growing among crowberry before it gets too dense, will grow higher and flower more freely because they are protected from grazing, for crowberry is not sought after by sheep. Once the crowberry has become established the heather plants rarely survive. The lichen *Cetraria aculeata* is abundant in this community in Hangingstones Quarry. In well established or ungrazed heather crowberry cannot compete successfully; plants in the fenced area of Hawksworth Moor are poor and few but heather grows up to two feet.

7. *Crowberry with matgrass and heath rush*.—Here crowberry is far less luxuriant and appears to have difficulty in penetrating the dense mat produced by these plants. Instead of compact, dense growth the crowberry is straggly and poor, forming extensive carpets intermixed with other plants. Above Barmishaw Hole there is a carpet of matgrass and heath rush with isolated boulders covered with crowberry dotted about like islands. When growing with matgrass, deep roots penetrate the dense mat of *Nardus* to the soil beneath, while the surface roots intermingle with the rhizomes of the matgrass.

RESPONSE TO BIOTIC FACTORS.

1. *Burning*.—There is very slow regeneration after burning, and even with surface fires most of the roots seem to be destroyed. On most of our burnt areas heather or bracken predominates at first—the heather generally from seedlings unless the fire was superficial enough to leave the roots undamaged—and the bracken from its deep underground rhizomes. If the ground is favourable for bracken this will make a dense stand, but if the ground is stony, shallow or exposed, crowberry will gradually invade either by vegetative growth from the unburnt edges of the area, or by seedlings which take two years to germinate.

2. *Grazing*.—Sheep do not apparently touch crowberry nor do grouse eat the tips as they do heather, so that the plant has a great advantage in grazed areas. Is it just unpalatable or is there some toxic principle in the leaves? According to a report on the chemical composition of crowberry published in Botanical Abstracts, 1918, 'The leaves contain a wax (largely a ceryl compound), benzoic acid, tannin, fructose, urson and probably rutin . . . *Empetrum nigrum* contains no alkaloids nor andronedotoxin or glucosides decomposed by emulsin . . .' Hawksworth Moor, which is fenced against sheep, has heather up to two feet high but very little crowberry except on banks and eroding peat. This part was burned at the same time as a large area outside the fence which is heavily grazed. In contrast, on the unfenced area the heather, which is grazed, was small and stunted, only two or three inches in height last year whilst crowberry seedlings have grown into flourishing plants on the almost bare peat. It is significant that this year (1960) the heather has grown and extended its area due to a considerable reduction in the number of sheep grazing the area during the spring and summer.

3. *Treading*.—Crowberry does not tolerate much trampling and is absent from paths even in densely colonised parts.

4. *Shade*.—Crowberry is absent from the plantations except for scattered plants and thins out rapidly among bracken as the shade increases.

REPRODUCTION.

In common with many wind-pollinated plants crowberry flowers very early, though this is unusual for a plant of upland areas. In the exceptionally early spring of 1959 it was in full bloom on the higher plateaux by March 27th and flowering was profuse; the male plants appeared red from the number of stamens and clouds of pollen were given off when the plants were trodden on. In 1960 male flowers were just coming out on the lower slopes on March 29th and by April 17th it was in full flower. Green fruits were already formed by May 17th (April 1959) and flower buds for the next season are formed the previous summer to overwinter as distinct

' knobs '. Birds eat the fruits when ripe, but appear to prefer bilberries. The fruit is a drupe with 2-9 stones which must depend on birds for distribution to suitable ground as fruits falling among the dense mass of debris would have little chance of growth even if they germinated, though they might be more successful among the isolated plants.

GERMINATION.

Germination is slow, probably about two years. On peat brought to a garden in 1958 crowberry seedlings appeared in 1960, barely $\frac{1}{2}$ inch tall, whereas two heather seedlings in the same soil are, one 5 inches high and 7 inches across and the other $7\frac{1}{2}$ inches high and 3 inches across. Both heather plants flowered in 1959 and produced seed. The crowberry seedlings did not flower in 1960. Further evidence for this slow germination is found on an area above Rushy Beck burnt June 17th, 1959, where heather seedlings are abundant this year (1960) but no crowberry seedlings have appeared although there is plenty of crowberry on the surrounding, unburnt moor.

INSECTS.

Crowberry is the food plant for the larvae of *Lygris populata*, the Northern Spinach moth, which was plentiful in the Coldstone Beck ravine in 1959, and *Callophrys rubi*, the Green Hairstreak butterfly, which has been found again this year near Coldstone Beck after having been reported missing from this area since 1956. It has also been observed that great numbers of the seven spot ladybird have appeared on crowberry in the late spring, possibly having wintered in its shelter.

MYCORRHIZA.

Present on the roots of crowberry but species unknown.

CONCLUSIONS.

In attempting to assess the chief causes of the exceptional spread of crowberry on Ilkley Moor we consider that the following factors have influenced the change of vegetation.

1. *Grazing*.—Exemption from grazing has enabled the crowberry to increase on the moor at the expense of other more palatable species, especially during the last twenty years when the moor has been heavily stocked with sheep.

2. *Erosion*.—Heavy grazing and accidental fires causing removal or drastic thinning of the plant cover accelerate erosion and eroding peat is a preselection site for crowberry.

3. *Growth*.—An established plant of crowberry is enabled by its surface and deep roots to take advantage of different layers of soil and by the production of debris to smother surrounding vegetation.

4. *Insect pests*.—Apparently few.

We are indebted to Dr. Sledge for his help and encouragement and to Professor Pearsall and Mr. R. J. Elliott for their advice.

Practical Heredity with *Drosophila*, by Gordon Haskell. Pp. 124. Oliver & Boyd, 1961. 10/6.

This book will satisfy a long-felt need by school teachers and others for a concise manual on practical *Drosophila* genetics. The first half is devoted to the structure of the adult fly and of the larva, the life history and the maintenance of stock cultures. Suitable mutant types are reviewed and the practical details of food preparation and of handling and sexing flies, which so often determine the success or failure of an experiment, are fully described. The second half of the book deals with a very varied series of crosses for class work. Those involving one mutant gene include the demonstration of sex linked and autosomal inheritance and the use of back crosses and multiple alleles. Crosses involving two mutant genes to demonstrate independent segregation, linkage and crossing over and three point test crosses are described. In all these crosses the results expected are given and are fully explained and the use of the chi-square test in assessing class results is adequately dealt with. Finally a chapter is devoted to the preparation of acetocarmine squashes of salivary gland chromosomes. The book is well illustrated and clearly written.

LINCOLNSHIRE BRYOLOGY

MARK R. D. SEAWARD

ALTHOUGH Lincolnshire is the second largest county in the British Isles, very few natural habitats remain. This has been mainly due to intensified agricultural work which has transformed the fens and moorlands of bygone days into 'smiling corn-fields' and grazing land for livestock. Nevertheless, Lincolnshire was one of the first counties to establish a Naturalists' Trust to preserve the few remaining natural areas. Many of these areas have now been made into nature reserves, and a renewed interest in all aspects of natural history has resulted in the county.

One such revival has been in the field of bryology. I have therefore endeavoured to collect together data which will furnish the needs of future workers by providing a short historical introduction and a review of the literature relating to this subject in Lincolnshire. These lists are by no means complete, and I should welcome both criticism and additional data.

HISTORICAL BACKGROUND.

The first accurate recordings were those made by Peck in the *Isle of Axholme* (1815). The first records supported by herbarium material, however, were those made by Bogg in the Louth district in 1859.

The first serious attempt to construct a Bryophyte Flora was made by the great Yorkshire botanist, Dr. Lees, who worked mainly in the Market Rasen area. Although he only stayed in this locality from 1877 to 1879, the records he made were both reliable and a source of information to succeeding bryologists. The data he accumulated provided a nucleus of material for his 'Outline Flora of Lincolnshire' published in *White's Lincolnshire Directory* (1892). This work included over 140 moss records for North Lincolnshire. Much of his herbarium material has been entrusted to the City and County Museum, Lincoln; the remainder will be found in the herbaria of the Cartwright Memorial Hall, Bradford, and the Natural History Museum, South Kensington, London.

Other notable workers in Lincolnshire at this time were Fowler in the Bourne district (1880), and Allett and Davy in the Alford district. Both Allett and Davy belonged to the Alford Naturalists' Society, whose material was checked by Lees. Their records from 1888 to 1890 can be found in the Society's registers kept at the City and County Museum, Lincoln. Other records for this period may be found in the Botanical Locality Record Club Reports for 1878, 1879 and 1880.

In 1898, Larder published part one of his 'Cryptogamic Flora of Lincolnshire' in *The Naturalist*. These records coincide with the material he collected in the Louth area in 1892 and 1893. Recently, Larder's herbarium material has come to light, and has been duly entered into the Lincolnshire Herbarium.

Woodruffe-Peacock, the famous Lincolnshire plant ecologist, showed his interest in the bryophytes towards the end of the nineteenth century. It was under his direction that a moss and hepatic register was started. Numerous pages and letters relating to this work are now in my possession, and his material collected between 1891 and 1903 has been entered into the Lincolnshire Herbarium. This valuable work was continued by Stow, mainly in the Grantham area, from 1898 to 1921. She published the majority of her moss records in *The Naturalist* between 1900 and 1903, and her 'List of Lincolnshire Hepatics' appeared in the 1902 volume of *The Naturalist*. The latter included 36 species only, but it was expanded and revised to include 43 species when it was reprinted in 1906 in the *Lincs. Nat. Union Trans.*

In 1904, Sir H. C. Hawley recorded many mosses from the Tummy area, but unfortunately his material has disappeared and many of his rarer records must be regarded with suspicion.

At this time, the centre of bryological activity seems to have moved to the Grimsby area. Smith and Bulloch were mainly responsible for this movement. The specimens collected by Bulloch have recently been rediscovered at the Royal Botanic Garden, Edinburgh. Perhaps as a result of this enthusiasm in the Grimsby district, Allison and the famous Yorkshire bryologist, Marshall, continued this work there. Indeed, we owe the majority of the recent bryological work in Lincolnshire to these two workers. A limited amount of Marshall's collections for 1910-1913 has been preserved in the Lincolnshire Herbarium. However, a considerable amount of his herbarium material must have been destroyed during the Second World War, when Hull Museum, in which his collection was housed (see *The Naturalist*, 1934, p. 209), was destroyed by enemy action.

Collections during the past fifty years are due mainly to Allison. As a result of his work, together with the existing records, Allison published a 'Bryophyte Flora for Lincolnshire' in the *Lincs. Nat. Union Trans.* for 1931 and 1932. Since the publication of this work, divisional records for Lincolnshire have more than doubled, and 35 new species and varieties have been added. Numerous additional records were published after 1932 by Allison in the *Lincs. Nat. Union Trans.*, his major contributions to Lincolnshire bryology ceasing by about 1938. Allison died in 1954 and so, it seemed, did Lincolnshire bryology.

There are numerous Lincolnshire bryophyte records in the British Bryological Society Reports from 1923 to 1945, and also in the *Trans. Brit. bryol. Soc.* from 1947 onwards.

Of the remaining bryological workers in Lincolnshire, the following are noteworthy:

H. F. Parsons	1876-8	Isle of Axholme
A. R. Yeoman	1892-3	Spilsby district
Rev. W. W. Mason	1897-1903	North Lincolnshire
H. Preston	1898	Ponton district
F. M. Burton	1902	Gainsborough district
Miss M. Owen	1912-13	Louth district
Dr. F. Rose	1948-58	Epworth, Haydor, Scotton, etc.

During the past three years, I have been able to work on the material donated by the above workers to the City and County Museum, Lincoln, and to establish a new Lincolnshire Bryophyte Herbarium there. A report of this work, together with recent bryological records for Lincolnshire, may be found in the 1958 and 1959 issues of the *Lincs. Nat. Union Trans.* I should like to thank Mr. F. T. Baker, M.A., F.S.A., for placing the above material and library facilities at my disposal.

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HYPERICUM DESETANGSII LAMOTTE IN YORKSHIRE

W. A. SLEDGE

At the Y.N.U. excursion to Langton-on-Swale on July 16th, 1960, shortly after the party had set off up the right bank of the river, Mr. Lawrence and his pupils brought me a St. John's Wort for identification. I named this *H. maculatum* Crantz (*H. dubium* Leers) and, independently, Miss Rob also identified it as this species and so recorded it in the botanical report of the meeting (*Nat.* 136, 1960). The specimen was not preserved and it is possible that the identification was correct though I felt uneasy about its identity as it lacked the pellucidly reticulate venation so characteristic of *H. maculatum*. Half a mile further up the river another considerable colony of what appeared to be the same species was found. From this I took plants for further study but did not examine the pressed specimens until later in the year.

A more detailed and careful examination of these specimens showed that the plants differ from *H. maculatum* in several respects. The sepals are lanceolate and pointed and the veins of the leaves less prominently reticulately-anastomosing, with the main veins or with these and some of their principal branches only, pellucid. The stems have two ridges only, not four as in *H. maculatum*. The upper leaves have glandular-punctate dots and occasional glands are present on a few other leaves though they differ markedly in this respect from the abundantly gland-dotted leaves of *H. perforatum*. Forms of *H. maculatum* exist both in the type with blunt and rounded sepals (ssp. *maculatum* var. *punctatum* (Schinz) Fröhlich) and in the type with toothed apices to the sepals (ssp. *obtusiusculum* (Tourl.) Hayek (= *erosum* Schinz) var. *perforatum* (Tourl.) Fröhlich) in which the leaves are glandular-punctate, but most British examples of *H. maculatum* belonging to both subspecies are imperforate.

The characters of the Langton specimens clearly show that they belong to *H. Desetangsii* Lamotte. This was first noted as a British plant by C. E. Salmon in *Journ. Bot.* 51, 317-319, t.528, 1913. Salmon's paper and a note on *H. Desetangsii* in *Rep. B.E.C.* 1913, 311-314, 1914, give full details of the history of this taxon and the various suggestions which different botanists have advanced as to its status and relationship with other St. John's Worts. It has been treated as a species, as a subspecies or variety of *H. maculatum*, and as a hybrid of *H. maculatum* and *H. perforatum* or between one of these species and *H. tetrapterum*. The evidence for *H.*

tetrapterum being involved in its parentage seems very unconvincing but the characters of *H. Desetangsii* are entirely consistent with its being a hybrid between *H. maculatum* and *H. perforatum* and as such it is cited in Dandy's *List of British Vascular Plants*. Clapham, Tutin and Warburg include it under *H. maculatum* as 'probably' this hybrid.

The narrower, acute sepals and the leaf venation afford the best characters whereby *H. Desetangsii* may be distinguished from *H. maculatum*. Other characters which have been ascribed to it are not always to be relied upon, and lack of agreement in different descriptions is perhaps to be expected in a taxon probably founded on hybrid plants. Thus Coste who illustrates it in *Fl. Fr.* 1, t.679—where it is stated to be intermediate between *H. tetrapterum* and *H. maculatum*—describes it as having a four-angled stem and devoid of black glands on the sepals and petals. Butcher & Strudwick (*Further Illustrations of British Plants*, t.109) also state that the sepals are without black marks though Bonner who gave a detailed account of *H. Desetangsii* in *Bull. Soc. Bot. Fr.* 25, 227, 1878, states that both sepals and petals have black glands, and Lamotte's original description refers to the petals as being 'à bord . . . garni de quelques glandes noir'. This is the case both in the Langton specimens and in Salmon's plant though the latter differs from the Yorkshire plant in its more abundantly gland-dotted leaves. Most accounts agree that the stems of *H. Desetangsii* have two prominent and two faint ridges but I can detect two only on the Langton specimens.

Salmon's description and plate of *H. Desetangsii* were taken from a Lewes, Sussex, plant and the only other British gathering which he cited was a specimen in Herb. Kew collected by R. B. Bowman at Richmond, Yorks. In the manuscript to his *Supplement to the Yorkshire Floras*, F. A. Lees says, under *H. Desetangsii*: 'This I have not seen but at once remembered that in July, 1906, I had seen it and noted it as a fine hybrid on the steep S-facing bank of the Swale on which stands Richmond's Norman Keep; and that the late James Ward of Richmond had sent me specimens as fine *quadrangulum* about 1870. It occurs in sunny places always near but above the river for many miles to Gunnerside, the flowers large and the leaf both pellucid-veined and gland-punctate.' I am not inclined to attach much importance however to Lees' retrospective identifications for there are in J. F. Pickard's herbarium (now at Leeds University) four sheets identified by Lees as *H. Desetangsii*, all of them incorrectly named. Pickard had subsequently sent his specimens to Salmon who identified three of them as *H. dubium* and the other as *H. tetrapterum*, and I am wholly in agreement with Salmon's identifications. These sheets include a gathering from between Low Gill and Howgill (V.C. 65) which is quoted as *H. Desetangsii* in the *Supplement to the Yorkshire Floras* and this record should accordingly be deleted as a misidentification.

The Langton station is within a few miles of Richmond and it may well be that this interesting St. Johns' Wort which has been overlooked by Yorkshire botanists for so long, will be found to grow in other places by the river in this part of Swaledale.

In prosperous times the average man in an industrial society is apt to take his daily food very much for granted. This is not so in more difficult situations where crop failures may, even today, literally mean the difference between life and death.

In his inaugural lecture on **The Reason for Studying Plant Diseases**, delivered in the University of Hull on February 10th, 1960, **Professor N. F. Robertson** focusses attention on the magnitude of the annual toll of plant diseases and on the complexities of the problems of their prevention. The estimates given of disease losses, whilst allowing for the difficulties involved in accurately assessing these, may come as a surprise to many.

Professor Robertson is concerned to demonstrate the dependence of field control measures on knowledge previously acquired by research employing the techniques of the basic sciences, particularly botany. He rightly points out that it is impossible to say where science ends and technology begins and no useful purpose is served by attempting to do so. Plant pathology is certainly a legitimate interest of a University department since researches in the laboratory and in the field are complementary. Indeed the association of pure ideas with practical problems imparts a sense of reality that stimulates those engaged in both. Professor Robertson is to be congratulated on making this point so convincingly. The lecture is published by, and obtainable from the University of Hull.

A STUDY OF THE DIPPER (*CINCLUS GULARIS*) IN THE SEDBERGH AREA

P. J. MAWBY

IN 1957 a sample count of breeding pairs of Dippers was made in an area of 20 square miles ($2\frac{1}{2}$ mile radius) round Sedbergh. The results of this work provided an interesting comparison with similar investigations being undertaken on the River Eden, 14 miles to the north-east, by Mr. R. W. Robson (*Bird Study*, Vol. 3, No. 3, 1956). He has kindly allowed me to use these, and some more recent observations, for a comparison between the two populations. This report deals with the breeding section of the life cycle.

TOPOGRAPHY

The Sedbergh area of North-West Yorkshire is composed of fertile valleys at approximately 400 feet above sea-level containing a system of rivers converging to the River Lune. To these rivers, streams run from the open fells, crossing the cultivated land on their way. The Upper Eden, studied by Robson, possesses a larger tributary system and, unlike the Lune and tributaries, both river and streams flow over limestone in their upper reaches. The two Dipper populations are effectively separated (for such a 'parochial' bird) by more than a mile of high ground at the nearest point, and although extensive ringing has been carried out on both river systems since 1952, there has been no evidence of interchange of populations.

NESTS AND NEST SITES

Nest sites (i.e. the particular rock face, bridge or bank on which the nests are built) and often the actual nests, have frequently been used for many years in succession. Six sites in the Sedbergh area have been used in each of the years 1957-60 inclusive. Many were also occupied when the Sedbergh School Ornithological Society records were started in 1938. Other nests, usually those in unusual sites, are only used once or twice presumably by one particular pair, and deserted when these die or leave the particular stretch of water.

TABLE I

To show the number of times nest sites and actual nests have been used 1957-60, in the Sedbergh area.

	Times Used, 1957-1960				Total
	Once	Twice	Three Times	Four Times	
SITES	18	9	11	6	44
NESTS	31	17	5	3	56

Of the 44 nest sites found in the years 1957-60, 19 were on artificial (man-made) foundations (bridges, culverts, sluices, walls and an old reservoir pump), while the remaining 25 were on natural features (banks, rock faces, trees, etc.). The height of the nest above normal water level varied from practically nil to 9 feet; the average was 4.3 feet. The average height on the Eden was very similar—4.5 feet. Very few nests were built away from water, the maximum distance being $5\frac{1}{2}$ feet. One nest was built $2\frac{1}{2}$ feet deep in a wall, another in a hole too small to admit a hand, in the roof of a culvert. Other interesting nests included two beneath rocks in the middle of fell beck; another, three feet under a stone in the bank and a fourth placed under a bank, not more than an inch above water level and completely hidden by a plant.

The Dipper is by no means an unsociable bird. Grey Wagtail (*Motacilla cinerea*) and Dipper territories overlap frequently. The two have been found nesting amicably at close quarters. With other birds also it will nest side by side and I have found an association with the Wren (*Troglodytes troglodytes*) particularly common, on one occasion the two nests being within a foot of each other.

The nesting population of the various types of water-habitats, and number of nests per mile is shown in Table II.

The high density on agricultural land reflects the tendency, also observed by R. W. Robson on the Eden, for Dippers to nest near farms and houses, possibly

TABLE II

Year	Total Nests Found	Streams on Agricultural Land			Streams on Open Fell			River		
		Nests	Length of Water	Nesting Density	Nests	Length of Water	Nesting Density	Nests	Length of Water	Nesting Density
1957	15	5	6 miles	0.83	1	6 miles	0.17	9	16 miles	0.56
1958	18	7	"	1.17	—	"	—	11	"	0.69
1959	28	11	"	1.83	3	"	0.50	14	"	0.87
1960	30	12	"	2.00	4	"	0.67	14	"	0.87

attracted by the high insect population. This, and the low population of thickly-wooded streams, rocky mountain becks, and slow-flowing muddy rivers, are shown on Map I

NEST-BUILDING

The Dipper, like the Wren, quite frequently builds more than one nest. From the numerous occasions on which I have found a single leaf in the nest, and also the occasional presentation of leaves by the male (see below), it seems possible that the actual choice of the nest to be used is made by the placing of a leaf in the nest. Further observations at this critical period are needed. The importance attached to leaves is further shown by the strong preference shown for one type. At one site around which oak leaves are always scattered in profusion, the nest was lined with beech leaves in 1958 and 1959. A new female used the same nest in 1960 when it was lined with oak leaves. On the fell-becks, nests were generally lined with wood-rush, although one bird from a nest at 1,100 feet descended 500 feet, deep into another territory to procure leaves. Only one clutch in more than 100 was laid in an unlined nest. It was discovered that the female is largely responsible for lining the nest. Watches were made from photographic hides both while nests were being lined and extensively after hatching. Fortunately at the two sites chosen, the birds could be distinguished since one was ringed and the other unringed. The female does most, if not all, of the incubation and it was thus possible to find whether she was the ringed or the unringed bird when she began to sit.

EGG LAYING AND INCUBATION

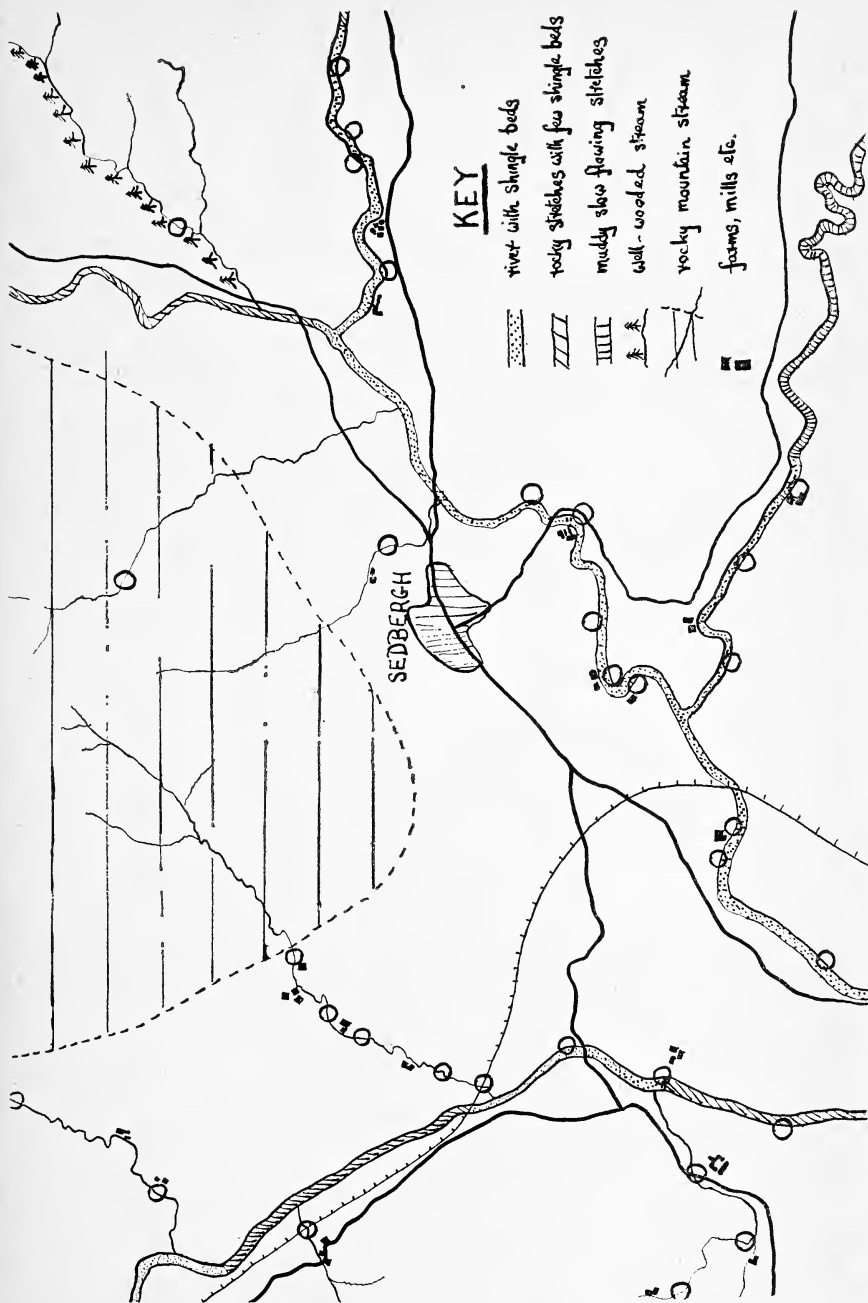
A short pause is usual between the completion of the nest and the laying of the first egg. Although this is usually only a day or two, it sometimes lengthens to a week or more. This may be due to temperature (see next section), water or food conditions.

The size of the clutch varies from 3 to 6 eggs in the Sedbergh area but 4 or 5 is usual and the averages for the years 1958-60 were 4.7, 4.8 and 4.8 eggs per clutch respectively. These show a significant difference, not only from the Eden average of 4.1 eggs (1953-55), but also from the frequent clutches of 3 and even 1 or 2 eggs in that area. Continuous incubation begins normally after the last egg has been laid, but sometimes there is a gradation of several days in the ages of the fledglings, probably due to an early start to incubation. More often, partial incubation begins on the penultimate egg, especially in larger clutches.

The incubation period varies between 15 and 18 days, with an average of 16.2 days. Of the 35 clutches for which I have accurate dates, 6 were incubated for 15 days, 19 for 16 days, 7 for 17 days and 3 for 18 days. In 1958, a Dipper incubated 5 eggs for more than 28 days before deserting them.

EFFECT OF WEATHER CONDITIONS

Continuous meteorological records are kept by the Sedbergh School Meteorological Society. During the winter, the Dipper's main occupation is finding food. As the weather improves, nests are repaired, even in early February. The time taken seems to depend directly on the ease with which food can be found. If cold weather returns, as it often does in March, with cold east winds, or if floods make food supplies



Map I Position of Dipper's nest sites (1957-60) in the Sedbergh District, showing the influence of farms and habitat on the nesting density.

difficult to find, nest-building is halted. The pause, mentioned earlier, between the completion of the nest and the laying of the first egg, seems to depend for length largely on temperature. The earliest breeding year recorded at Sedbergh was 1959: the first Dipper's egg was found on March 7th.

A sudden cold spell or flood may cause large-scale desertions of nests in which laying or incubation is proceeding. Another result of adverse conditions seems to be the laying of a large proportion of infertile eggs. Between April 4th and 12th, 1960, 4 pairs laid 20 eggs, of which only 10 hatched. The 8 days were characterised by abnormally heavy rainfall— $3\frac{3}{4}$ inches in all. In 1959, 3 nights of frost in late April caused 5 nests to be deserted. The most successful breeding season was 1958, when rainfall was well spread out and minimum temperatures were around 40°F. throughout April.

TABLE III
Distribution of Laying Dates

Number of clutches begun in each weekly interval, from March 1st to May 24th.

	March				April				May			
	1-8	-15	-22	-29	-5	-12	-19	-26	-3	-19	-17	-24
EDEN 1953-1955 .	1	6	4	11	15	13	4	4	9	4	2	2
EDEN 1956-1958 .	2	8	8	10	14	6	6	4	5	9	6	5
SEDBERGH 1957-1960 .	1	5	7	11	15	12	11	6	1	6	2	5

During the early part of fledging the male took the major part in collecting food, passing it to the female in the nest. As the young developed, the female took over a progressively larger share of the feeding. Table IV shows a typical day of good weather when the young were 14-15 days' old. The female visited the nest 209 times and the male 93 times. The watch was begun at 4-40 a.m. and, although sunrise should have been 4-30 a.m., the sun did not reach the nest till 8-10 a.m. The first feed was given at 5-32 a.m. and the last at 8-32 p.m. Great care was taken to keep the nest clean. Not only were faecal sacs removed regularly but leaves and other debris were cleared from around the nest and even a camera and piece of cloth placed under the nest were attacked. Display occurred whenever the parents met but such meetings were not frequent since the male collected food mainly above the nest and the female downstream.

TABLE IV

Number of feeds given to three 14-15 day old Dippers, in hourly periods from dawn to dusk.

Visits of parent Dippers per hourly period	A.M.		6-00-7-00		7-00-8-00		8-00-9-00		9-00-10-00		10-00-11-00		11-00-12-00		P.M.		1-00-2-00		2-00-3-00		3-00-4-00		4-00-5-00		5-00-6-00		6-00-7-00		7-00-8-00		8-00-9-00		9-00-10-00		
	4-00-5-00	5-00-6-00	6-00-7-00	7-00-8-00	8-00-9-00	9-00-10-00	10-00-11-00	11-00-12-00	12-00-1-00	1-00-2-00	2-00-3-00	3-00-4-00	4-00-5-00	5-00-6-00	6-00-7-00	7-00-8-00	8-00-9-00	9-00-10-00																	
	—	16	41	24	34	27	30	15	15	8	8	10	11	21	21	9	11	—																	

REPLACEMENT AND SECOND CLUTCHES

In most cases if the first clutch was lost a second (replacement) clutch was laid, usually within two weeks. Only very occasionally are new nests built for a replacement brood or for a second clutch, and then only if the original nest has been damaged.

The average time elapsing between the laying of the first egg of a successful

first brood and that of the second brood was $7\frac{1}{2}$ weeks, making the interval during which the nest was empty about $1\frac{1}{2}$ weeks.

TABLE V
Breeding success—Eden '52-'58 and Lune '58-'60 (excluding nests for which any information was doubtful or lacking)

Year	Area	Nests	Eggs Laid	Average Clutch	Hatched	Fledged	Average Fledged	% Fledged of Eggs
1952	Eden and Tributaries	10	45	4.5	36	35	3.5	78.3
1953	"	24	107	4.3	82	82	3.4	76.6
1954	"	40	152	3.8	88	88	2.2	64.5
1955	"	18	73	4.1	53	53	2.9	79.5
1956	"	21	73	3.47	58	44	2.1	59.0
1957	"	20	81	4.05	49	39	2.0	50.0
1958	"	28	120	4.3	79	63	2.25	52.5
1958	Sedbergh and Area	19	90	4.74	59	59	3.1	67.8
1959	"	21	101	4.81	54	49	2.3	50.0
1960	"	25	119	4.8	85	67	2.7	56.8

MOVEMENT OF BREEDERS AND YOUNG

Insufficient recoveries and retraps have so far made detailed analysis of movement impossible. Recoveries to date on the Lune show a movement of juveniles up the rivers before breeding, e.g.

- 2008132 Pull 1958 Ad on nest 1960 5 miles up river.
 2008118 " " " " 1 mile down tributary, $1\frac{1}{2}$ up river.
 2008150 " " " " 1959 $1\frac{1}{2}$ miles up river.
 2014591 " 1959 Ad Autumn 1960, $\frac{1}{2}$ mile up river, $\frac{1}{2}$ mile up tributary.

This movement is not shown by Eden recoveries; in fact the reverse seems to be the case:

- 274056 Pull 1953 Retrapped 1954 1 mile down tributary, 5 down river.
 274057 " " " " 1955 1 " " " 1 " " "
 274085 " 1954 " " 1955 $1\frac{1}{2}$ " " " 3 " "

All such movements are small and no recoveries of more than 10 miles have ever been obtained. Thus the Dipper may be considered sedentary.

MORTALITY RATE

Assuming no change in breeding population, the mortality rate may be worked out from the table of breeding success.

- Average fledged—2.7 young in 1st broods.
 20% lay 2nd broods, averaging 2.0 young per brood.
 Consider 100 breeding pairs—200 birds.

They would produce, in 1st broods—270 young.
 In 2nd broods, 20 pairs produce—40 young.

Thus total at end of breeding season = 510 birds. Since there has been no evidence of large scale increase or decrease, 310 must die before next breeding season.

$$\text{Mortality Rate (Sedbergh 1958-1960)} = \frac{310}{510} \times 100 = 60.8\%$$

$$\text{Eden rate 1952-1955} = 64.4\%$$

Lack (*Natural regulation of animal numbers*, 1954) gives the following figures: Robin 62%, Starling 52%, Swallow 63%.

I wish to thank Mr. R. W. Robson and members of the Sedbergh School Ornithological Society for help given in this work.

FIELD NOTES

Ray's Sea Bream (*Brama raii*).—This note has been prompted by the finding on the Humber beach of a Ray's Bream on December 11th, 1960, by Messrs. A. Rider and A. Walgate of Hull. The fish, identified by Dr. T. A. G. Wells of Hull College of Technology, measured 13 in. in length and 8 in. in depth. More than a dozen specimens were found washed ashore along this part of the coast during last autumn, duly reported to E.H.

This species occurs fairly commonly off the Yorkshire coast and is frequently washed ashore during high seas in the autumn. The fish was first described in 1681 from a specimen found in 'Middlesburgh Marsh'.

During the autumn of some years several are reported whereas other years are without a single record.—BRIAN S. PASHBY.

Bewick's Swan summering in Yorkshire.—The Bewick's Swan (*Cygnus bewickii*) is a winter visitor to Britain from north Russia, and is usually seen in this country only between the months of November and March-April. It is recorded in Yorkshire in most winters, although numbers vary considerably, depending very much on the severity of the winter, especially in its more favoured haunts in Holland.

It may be of interest to record that an immature bird of this species spent the whole of summer 1960 on the Fairburn Ings Nature Reserve. It first appeared on May 1st, when it was seen in flight. No birds had been seen previously since a family party of five on April 2nd and 3rd. To begin with, it remained for the most part on the 'main bay' and was seldom seen flying, which perhaps suggests that it was a slightly injured or sick bird. It associated freely with Mute Swans (*C. olor*) which were present in large numbers on the reserve and appeared to feed quite happily, though usually a little apart from the Mute Swans.

By early July it was moving much more freely about the area and, indeed, to pools off the reserve. There was no indication that its flight was hampered in any way. It stayed in the neighbourhood, and usually on the reserve, until November 20th, by which time winter arrivals of Whooper and Bewick's Swans were already taking place.—C. WINN.

[Unusual numbers of Bewick's Swans are reported in the 1960-61 winter.—R.C.]

Bird Portraits in Color, by **Thomas S. Roberts**. Pp. vi + 194, with 561 figs. in 92 colour plates. University of Minnesota Press. London: Oxford University Press. 1961. 48/-.

This work first saw the light in 1932 as the *Birds of Minnesota* and when this went out of print, in 1934, it was reissued under the present title with a restricted text. This is the third edition in this form and it has been rewritten by the Director, the Curator of Birds and a Research Assistant of the Museum of Natural History, University of Minnesota. Each plate figures two or three species, often in several plumage phases, so that the accompanying text, which occupies only the opposite page, is limited to a brief survey of the range, nesting place and voice of each species.

The plates are the work of Major Allan Brooks, Walter A. Weber, Walter J. Breckenridge, who as Director of the Museum is responsible for a portion of the text, Francis Lee Jaques and a single plate by Louis Agassiz Fuertes. American illustrators have had a great deal of encouragement, especially on behalf of the *National Geographic Magazine*, and the standard is high. The birds are very competently drawn and although the colour reproduction in some cases leaves a little to be desired, the plates provide very adequate plumage maps for identification purposes.

Many of the species featured are now admitted to the British List and the rather more liberal policy with regard to the admission of trans-atlantic species, which indeed are being observed with greater frequency, would make this a very useful work of reference for the south-western and Irish observatories. There is one warning note which should not pass unheeded. Of the Dowitchers, now recognised as two species, both of which have been identified among skins collected in Britain, it is remarked that 'They are so similar that distinguishing them in the field is practically impossible'.

The book is pleasantly produced, with generous margins and a sturdy binding beneath the dust jacket.

A.H.

BREEDING REED WARBLERS IN SOUTH LANCASHIRE

COMPILED BY G. W. FOLLOWS AND W. A. PRESCOTT

PRIOR to 1953 there was only one recorded occurrence of the Reed Warbler (*Acrocephalus scirpaceus*) in South Lancashire. This was a bird which was heard in full song near Leigh Flash on June 5th, 1948, by A. Hazlewood and A. L. W. Mayo (*vide Oakes, Birds of Lancashire, 1953*). It was not until 1953 that the Reed Warbler became established as a breeding bird and the 'discovery' was entirely due to the work of Mr. F. R. Horrocks. On June 2nd, 1953, whilst passing a reedy stretch of water known as Astley Swamp, Horrocks heard what was for him an entirely new bird, which he believed to be a Reed Warbler. No views were obtained until the following day when the bird showed itself several times whilst skulking in a bed of Great Reed (*Phragmites communis*) that bordered the swamp. Later in the month he found two nests in the reeds, both containing eggs.

In mid-June Horrocks observed a Reed Warbler carrying nesting material to a stand of *Phragmites* at the side of Ramsdale's Flash which adjoins the larger and better known water, Leigh Flash. In due course the nest was found but, unfortunately, it was destroyed by vandals and the *Phragmites* trampled down. A further nest was constructed, however, this time interwoven between strands of Reed Mace (*Typha latifolia*). The nest remained under careful observation until the eggs hatched, but unfortunately the young came to grief.

In 1954 Horrocks extended his observations to include the colliery flashes west of Leigh. At Bickershaw and Wigan he found the species to be well established and an annual survey has since been carried out.

HABITAT

Except for the pair which nested in *Typha* at Ramsdale's Flash, all proved breeding has been restricted to *Phragmites*. Moreover, only reed beds which stand in water have been occupied; those which are dry during the breeding season appear to be avoided.

BREEDING HAUNTS

Astley.

The shallow swamp has two moderate beds of *Phragmites*, one at the eastern side in which the first nesting birds were found and a smaller one on the southern side. There are also much larger beds of *Typha* and an extensive variable surround of *Juncus*. During the spring of 1959 an attempt was made to drain the swamp, and though this has had no apparent effect on the Reed Warblers as yet, it may possibly influence them in future years.

Bickershaw.

The larger of the two reed beds at this site was partly destroyed by colliery tipping in 1957 but has since altered little in size and now holds about six pairs. The other, though having only half that number, is now the more extensive and has increased somewhat in recent years.

Ramsdale's Flash.

Since the nesting record already described colliery tipping has destroyed the *Phragmites* and no further records have been obtained.

Wigan.

Blackwater Flash, which originally was the stronghold of the Reed Warbler in the Wigan area, was filled in by refuse tipping during the summer of 1959 and now not one strand of *Phragmites* remains. At the other reed bed, which borders a marshy area west of Blackwater Flash, the number of breeding birds has remained constant.

Worsley.

In 1960 an additional haunt was discovered at Middlewood, Worsley, where at least one pair bred in the *Phragmites* surrounding a lake.

1961 April-June

Other Sites.

Other suitable sites at Bamfurlong, Bickershaw, Platt Bridge, etc., have so far failed to produce any nesting birds.

BREEDING STRENGTH AND SUCCESS

During the first full survey of 1954 most of the nests contained in the following table were actually found. Subsequent estimates, however, have been based on singing ♂♂, territorial activity, and food carrying, and are, incidentally, minima. Thus the fact that they have been undisturbed has resulted in a very high rate of success.

Year	Astley	Bickershaw	Ramsdale's	Wigan	Worsley	Total
1953	2		1			3
1954	3	5		6		14
1955	4	6		6		16
1956	4	6		15		25
1957	2	5+		8+		15+
1958	3	8		9		20
1959	4	10		8		22
1960	2	6		5	1	14

MIGRATION NOTES

Only Astley, of the various haunts described, is visited with sufficient frequency in spring for arrival dates to be recorded with any reliability. The dates of arrival have been outlined in the following table:

1954	1955	1956	1957	1958	1959	1960
4th May	11th May			23rd May	30th May	29th May

Departure dates are unknown but birds have been observed feeding young at Astley in September.

CONCLUSION

When the 'discovery' was first made known several authorities referred to it as a northerly spread of Reed Warblers. However, tenacity in breeding in disturbed areas points to the Reed Warbler having been already established as a breeding bird in 1953 rather than fighting to secure a foothold.

Astley Swamp, however, only developed permanent water about 1950 as a result of the sudden increase in the rate of subsidence, which, incidentally, also increased the depth of nearby Astley Flash and resulted in a sharp increase in the number of diving duck, recorded at this water. Thus the Reed Warblers of 1953 may well have been the first in this locality.

Until Horrock's investigations, however, the Bickershaw sites had been bypassed as they are by open water of small or negligible size, set amongst the unattractive wasteland of colliery spoil heaps.

Moreover, in the Wigan area there are many flashes which have been filled in during the last twenty years. Around the edges of several of these flashes are stands of *Phragmites* which indicate that in previous years these flashes may have contained considerable stretches of Great Reed—probably housing numerous Reed Warblers.

Thus we can safely conclude that, at least in the cases of Bickershaw and Wigan, breeding had occurred for a number of years before it was actually discovered.

THE FUTURE

Gradually the flashes and marshy areas of South Lancashire are being eliminated, in some cases by draining but in the majority by the tipping of refuse and colliery waste. Should this continue on the present prodigious scale the Reed Warbler is likely to diminish considerably and the ornithological wealth of the district will suffer accordingly.

ACKNOWLEDGMENTS

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LINKS WITH PAST YORKSHIRE MYCOLOGISTS

E. M. BLACKWELL

*'I like these links and fortuitous associations with the past.
They lend perspective to the great turmoil of life.'*

William Plomer in *At Home* (1958).

ONE day, a long time ago, a friend approached me saying: 'I have just shaken hands with someone who once shook hands with Beethoven, would you like to shake hands with me?' This done, I returned with: 'And I have shaken hands with a grand-daughter of Queen Victoria, who surely one day had her hand held by the great Queen.' 'And she,' rejoined my friend, 'as a child had shaken hands with George IV, who, don't you remember, said to her "Give me your little paw".' It's a great game and I begin my story of past mycologists with the thought that I have shaken hands with William Norwood Cheesman, who once told me he had shaken hands with Charles Darwin.

If I limit my story to those past mycologists whom some of us can recollect, or have links with, it means that we can only salute the Yorkshiremen Sir Tancred **Robinson**, born about 1660, and Dr. Richard **Richardson** (1663-1741), both doctors of medicine—Dr. Robinson was physician to George I—who were collecting toadstools at the opening of the eighteenth century and sending their good finds to John Ray. Dr. Robinson gave the first description of English truffles (1693). One of Dr. Richardson's good finds was a *fungus phalloides*, which, he wrote, 'is known to all our country people by the name of stinkhorn.' Another was a '*fungus minimus infundibuliformis superne nigris punctis rotatus*', found on old cow dung, which Dr. John Ramsbottom, O.B.E., tells me was most surely be *Poronia punctata*. Because of his family name I should like to salute in passing Dr. Martin **Lister** (1638?-1712) who, too, sent his finds to John Ray. As he was made a Fellow of the Royal Society in 1670-71 and then practised medicine in York 'with repute' until 1683, we may presume his collections of Yorkshire fungi were made within these years. He became physician to Queen Anne.

And because of his fame I cannot omit James **Bolton** who flourished from 1758 (the exact date of his birth is unknown) to 1799. This classic figure stands out in Yorkshire history a hundred years after the Ray period, and to him we made our bow in Halifax, where he was born and where he died, when we assembled there in 1953 and heard Mr. E. W. Mason, O.B.E., in his Presidential Address to the Y.N.U., remind us that he had, between 1788 and 1791, published the first English book devoted exclusively to fungi, *An History of Funguses growing about Halifax*, in four volumes which, he told us, 'to this day remains the only book on fungi in the English language ever to be translated into the German language.' It was printed in Huddersfield. The book is illustrated by 182 plates upon which are figured 231 species. He etched his own plates and they are hand-coloured, probably by himself. (The volumes could also be obtained with uncoloured plates.) He describes his specimens very carefully and his descriptions are still accepted in the text-books, although they are practically confined to superficial characters as the only available magnifying power was what he calls a little spy-glass. There are, too, in the Natural History Museum, South Kensington, 25 unpublished drawings and there is a letter by Bolton in the autograph collection there. It is impossible in a brief survey such as this to do justice to James Bolton, whose thorough, reliable and extensive work far surpassed that of any other Yorkshireman of the period. He was an all-round naturalist and worked the area around Halifax during the last four decades of the eighteenth century. His work on fungi was only a part of the whole, yet his records have been used and accepted by Persoon, Fries, Rabenhorst, Berkeley and others. They had been carefully checked against contemporary records of European mycologists. He was fully aware of the probability of one and the same species being described simultaneously under different names. He was no 'splitter'. 'There is a pride in man,' he wrote, 'to be thought the inventor or discoverer of something new . . . but to add a new name to a known plant . . . because we meet with an individual perhaps distorted in its shape . . . sickened by improper food . . . this is not only vain and ridiculous in itself, but pernicious in its consequences.' No doubt many observers were influenced by James Bolton at the time. Many sent him specimens. Charles Crossland, who worked the area around Halifax a

century later wrote fully of James Bolton in the *Halifax Guardian*, 1910, under the title, 'An Eighteenth-Century Naturalist', and three years earlier in his Presidential Address to the Y.N.U., 'The Study of Fungi in Yorkshire', he had given a full and careful record not only of James Bolton but of the many collectors in Yorkshire who used to send specimens first to him and later to James Sowerby for his *Coloured Figures of English Fungi*, and to Hudson for his *Flora Anglica*. There was e.g. Edward **Robson** of Darlington (one of the original Fellows of the Linnean Society) a botanist described by Bolton as 'diligent and well-informed'. In 1794, Robert **Teesdale** enumerated 33 species of Yorkshire fungi which are incorporated in his 'Catalogue of the more rare plants which grow wild in the neighbourhood of Castle Howard', published in the *Transactions of the Linnean Society*, 2, 103-125, 1794.

John **Bohler** (1797-1872) was not Yorkshire-born; he was born in South Wingfield near Alfreton, Derbyshire, December 31st, 1797, but he died in Sheffield, and through the middle years of the nineteenth century he collected fungi in Yorkshire. He began as a 'simple stocking-weaver collecting plants', then he collected medicinal plants for doctors, became an expert microscopist and turned to lichens. In 1835-37 he published *Lichenes Britannici, specimens of the lichens of Britain*, sixteen monthly fasciculi, each of eight actual specimens, collected and mounted by himself with original descriptions, 128 in all, at 3/6 each fascicule, a valuable work which is now very scarce (the B.M. has no copy). Later he became a collector of rare fungi all over England. Dr. Aveling's fine folio, *History of Roche Abbey* (London, 1870) has in the appendix 'A Flora of Roche Abbey' by Bohler. He compiled other floras elsewhere.

The collection of fungi seems to have waned in the mid-nineteenth century, but there were some good mycological babies born, destined to carry on the work, and these are just within living memory.

First come two founder members of the newly-named Yorkshire Naturalists' Union, neither of them Yorkshiremen, but certainly Yorkshire by adoption. The Rev. William Weekes **Fowler**, M.A. (1835-1912) was known to Mr. Bayford, who told me that he was interested in all investigations and not exclusively a mycologist. Nevertheless in his Presidential Address at Pontefract in 1877, the first to the new Y.N.U., he urged that more attention be given to the 'neglected orders' meaning fungi. In this appeal he had the support at that meeting of Dr. Franklin **Parsons** (1846-1913), the Medical Officer at Goole until 1879. These two worked together on excursions along with George **Brook** of Huddersfield and William **West** of Bradford, the father of the late Professor West of Birmingham University, whom many of us knew . . . They were working when the young Soppitt came into the field. Dr. Parsons left for Croydon in 1879, but before he left he had been the means of founding a Scientific Society at Goole, and one at Selby which brought in the young Cheesman. Canon Fowler stayed on and was President again fourteen years later. He must have been a splendid person. 'His addresses,' said Mr. Bayford, 'throw light on his character'.

Thomas **Hick**, B.A., B.Sc., lectured on mushrooms to the Leeds Naturalists' Club in 1876, and exhibited fungi at the Y.N.U. meeting of 1879. Later he carried out an investigation, in conjunction with George Masee on 'the corn mildew' as they called *Puccinia graminis*. Their two papers appear together in *The Naturalist*.

We are now approaching a 'Grand Period' in Yorkshire mycology in which the outstanding worker was Henry Thomas **Soppitt** (1858-1899). He comes exactly one hundred years after James Bolton, and stands out with a similar distinction. He was born in Bradford and died in Halifax at the early age of forty, after a fortnight's illness from pneumonia, much beloved and, says his biographer, 'leaving the world poorer by the loss of an original worker, but leaving it richer by his legacy to mycology.' His father was a drysalter with a strong social sense, an advocate of temperance and a philanthropic visitor to prisoners at the Bradford Town Hall. Although 'compelled to earn his living by an uncongenial and poorly remunerative occupation' (he joined his father's business) the young Soppitt developed 'by his untiring energy and never-flagging perseverance an all-round knowledge of natural history.' He began with butterflies and flowering plants, then turned to fungi and finally specialised in plant rusts. His work was sound and scholarly and he cleared up some life-histories in the Uredineae. He was the pure naturalist, the observer, the collector, with nothing but his own real interest to spur

him on: his hobby often carried on 'in time torn from a night's rest'. He would rise early in the summer and collect for an hour or two. He had good eyesight and a retentive memory. He was ever ready to impart information, devoid of personal jealousy and he made many friends who found it 'a liberal education to be with him out of doors'. One of his friends, Mr. E. G. Bayford, was in his ninetieth year when I visited him in May, 1956, at his home in Barnsley, and heard him speak with affection of his old friend. In answer to my questions he said: 'Soppitt was as frail as his photograph suggests: he was consumptive. He had an amiable disposition and a saving sense of humour, but his chief characteristic was his enthusiasm. He was not a great talker, unless he had something to say; then he could talk well. He wrote more readily, and well, and enjoyed writing.' (In this, Mr. Bayford compared him with Seth Mosley, the first Curator of the Tolson Museum, Ravensknowle.) There is a long list of papers to his name, and some species of fungi have been named after him. He was a founder member of the British Mycological Society and attended the meeting in Dublin in October, 1898. So highly was he esteemed by his colleagues in the Y.N.U. that a sub-committee was formed to consider a memorial. Mr. Bayford showed me a copy of the report of May 8th, 1901, and told me that over £66 was collected towards buying his library and herbarium from his widow.

Four other Yorkshiremen of what I have called the 'Grand Period', born some ten or fifteen years before Soppitt, lived well into the twentieth century and carried on his work with enthusiasm, treasuring his records, specimens and books and endeavouring to maintain the high standard he had set, in the county in which they continued to live and work. The four are: William Norwood Cheesman, Charles Crossland, Thomas Hebden and James Needham. Another Yorkshireman, George Masee, although away from his native county for most of his adult life, kept closely in touch. Two others who came to reside in Yorkshire worked with them: Rev. William Johnson and Alfred Clarke. For the most part academically untrained, they were so persevering, utterly reliable in observation, faithful and regular in their records, that they became educated in nature's school and later wrote scientific papers and wrote them well. They were stalwarts. 'Great boys' Dr. Ramsbottom calls them, and he has written of them: 'Soppitt, though working with them until he died, was not a "character" in the usual sense. He was remembered rather for his genial *bonhomie* and the warm-heartedness of his race (Yorkshire) tempered by a natural diffidence of manner that made it impossible for him to hurt the feelings of anyone' (*Trans. B.M.S.*, 1, 83, 1899). This hard-working group was closely linked by letters of identification and by occasional visits from Mordecai Cubitt Cooke and Carlton Rea; M. C. Cooke, whom George Masee had joined in the Kew Herbarium, famous for his *Illustrations of British Fungi* and for *Grevillea*, the founder of the Quekett Club, Carlton Rea a member of the Woolhope Club. Later on they were helped by youngsters like A. D. Cotton, John Ramsbottom, A. A. Pearson and Elsie M. Wakefield. Myxomycetes were sent to Miss Gulielma Lister; lichens to Miss Annie Lorrain Smith.

The lively observations on plant rusts by Soppitt and Needham drew the interest of Dr. Charles B. Plowright (1849-1910) of Norfolk who in 1899 compiled *A monograph of the British Uredineae and Ustilagineae* and made many contributions to *Grevillea*, the while in practice as a medical man. I have been told that on visiting a patient Dr. Plowright first looked out of the window and if he saw a plant rust he went down first to collect it.

I knew Mr. W. N. Cheesman (1847-1925), whose white beard, rosy cheeks and twinkling eyes, I well recall, and his childlike appeal as he stood with his head bent a little to one side. His decorative, exuberant handwriting speaks for itself. On my first fungus foray with the British Mycological Society (Shrewsbury, 1917) I remember we elected as President for 1918 the Very Rev. David Paul, LL.D., D.D., and voted Selby for the autumn foray and elected as organiser W. N. Cheesman, who had been secretary of the Selby Naturalists in 1861, and who had organised the second fungus foray held by the Y.N.U. with George Masee as leader in 1884. (There is a lively description of this foray in *The Naturalist* of 1884-85, p. 140.) He was in London before joining his uncle at Selby in the drapery store, and was proud of having known Charles Darwin whose home he had visited occasionally. He became a good citizen of Selby and was highly respected. He died a day after the autumn meeting of the British Mycological Society in the year he was President, 1925, and too ill to come, as he wrote in a long letter which ends with a characteristic

P.S.: 'I enclose cheque for one hundred guineas which I wish our Treasurer to invest and the proceeds applied . . . as the Council may decide.' This we know now as the Cheesman Fund to help young mycologists to attend the forays of the B.M.S. His Presidential Address to the Y.N.U. in 1916, entitled 'Economic Mycology: the beneficial and injurious influences of fungi', can still be read with profit. Willis Bramley knew him in the last four years of his life and writes: 'He was interested in mycetozoa and assiduously collected them. Usually they were wrapped up in paper and no one else saw them.' I expect he sent them to Miss Lister.

Few, if any, can recall today Thomas **Hebden** of Cullingworth, but he was one of this group of men who, like Soppitt, toiled for their daily bread, often at uncongenial tasks, whose every spare moment was spent on their chosen hobby—the study and collection of fungi. He studied the fungi of Goit Stock, Harden, Bingley, and discovered many uncommon species. The late Councillor Fred Harker of Huddersfield, who as a young man worked under Alfred Clarke, once told me how, when their business in Keighley was completed, his 'boss' would say to him: 'Now as there's time we'll go and look up Hebden'. Fred Harker recalled him as a man of rough exterior, workman type. He specialised in lichens, a quiet, faithful collector, a modest worker. In a group photograph he looks a big man with a moustache, wearing a 'woodman' hat. Dr. Ramsbottom writes: 'Hebden came to the museum to see Miss Lorrain Smith when he was very old. She brought him along to me and we talked about the old Yorkshire mycologists. He had corresponded with Miss Smith for some years. He told me many tales with a real countryman flavour. He had lunch with me in the museum restaurant and thoroughly enjoyed meeting some of my colleagues. I got the impression that he was (or had been) a keen naturalist.'

The Rev. William **Johnson** (1844-1919), too, was a lichenologist. He gave his herbarium to Leeds University. And again I quote from J.R.'s letter: 'If you are including lichenologists, don't forget William **Mudd** (1830-1879). He was born at Bedale and was for a time curator of the Cambridge Botanic Garden. He appears to have been a "character".'

Perhaps James **Needham** (1849-1913) came nearest to Soppitt in his selfless attitude to his hobby. Another working-man naturalist, he was an ironmoulder, and after a ten- or twelve-hour-day in the foundry he would 'fettle hisseln up a bit' and away he would go to the woods and moors, 'Jimmy Needham, the toad-stooll man' . . . 'W'ats Jimmy rooitin' for? Has he lost summat? Nay, he's nobbut seeking funguses 'at he will'nt know he's fun wol he gets a magnifying glass to see 'em wi'.' His mates chaffed him but they loved and admired him too. In his late thirties he joined the Hebden Bridge Literary and Scientific Society, a quiet steady worker with a flair for collecting. He was soon specialising on liverworts and mosses. In 1889 he met Charles Crossland who interested him in fungi and together they explored his district until due to skilful collecting Hebden Bridge became as well-worked as Kew and Scarborough. He found many new species: new to Britain and new to science, including *Gnomonia Needhamii* Mass. et Crossl. But he still collected mosses and as a guide was much sort after by bryologists. He must have acted as leader to hundreds of parties, and to leading naturalists. He was never tired of helping others, and took especial pleasure in stimulating young folk. Charles Crossland invited him to join the Y.N.U. Fungus Foray of 1892, and he tells us that from then on he rarely missed a meeting, becoming a valuable member of the Committee. 'His foray days were red letter days and he was up betimes, peering into corners where others would not think of looking.' 'He rarely missed a week sending a consignment of cryptogams of one kind or another to Halifax for examination. This occurred during eight or nine months of the year for twenty years.' The following description appeared in a local newspaper in July, 1913, between his death and burial, entitled 'Mr. J. Needham of Hebden Bridge: an appreciation': ' . . . a somewhat diminutive but withal wiry figure with an intelligent and rather careworn face, bright eyes, high forehead and dark hair turned almost white in places . . . rather slow of speech, but ever with an earnest and interested tone of voice, unassuming in manner but anxious to help and give encouragement to any who showed an interest in nature's wonders. He was indeed a most loveable character and it was not surprising that he had many friends both far and near' . . . Others have recalled that: 'He would express himself with amusing frankness in his native dialect and with a quaintness all his own . . . As a raconteur he was inimitable . . .' Dr. Ramsbottom, in *Trans. B.M.S.*, **30**, 1, 1948, wrote: 'James Needham was the old type of north country working-man naturalist . . . who thought nothing of

a 30-mile tramp over the moors in search of fungi and mosses. My friend the late Professor C. E. Moss knew him well and always spoke of him in the highest terms of praise and affection.' I have seen a letter from C. E. Moss to J. Needham announcing in bryological terms the birth of a daughter to him and his wife, the daughter of Alfred Clarke.

Charles **Crossland** (1844-1916) was five years older than Needham but survived him by three years and wrote in *The Naturalist* (1913, p. 294) a most affectionate obituary of him, full of admiration and gratitude, for Needham had in his selfless way helped him greatly. Together they had scoured their area, in particular for microfungi. He himself had been turned to fungi in 1888 by George Masee and Alfred Clarke whom he met on that third fungus foray. His interest in plants was aroused in the first place through helping a schoolgirl daughter with a collection of flowers. When, in 1892, the Mycological Committee was formed he became secretary and George Masee chairman. From then on for twenty years he wrote long and full accounts of the annual forays for *The Naturalist*. He was a founder member of the British Mycological Society and its first Treasurer in 1896. He collected with Soppitt for five or six years and they wrote joint papers for *The Naturalist*. In the years 1902-05, with much help from James Needham and Alfred Clarke and others, he and George Masee compiled *The Fungus Flora of Yorkshire*. So much did Charles Crossland write and so much has been written about him that we feel to know him well. An 'Appreciation' with photograph in *The Naturalist* of 1910 ends with a three-page list of his publications. Indeed there are some alive today who met him; including J. H. Lumb, F.R.M.S., the President this year of the Halifax Scientific Society to which he belonged. My own links with him are, firstly, the pleasure of finding his grand-daughter, Mary Peacock, in the audience at a meeting of the Halifax Scientific Society last year; secondly, through the late Mr. Arthur Sykes, one of Huddersfield's naturalists who remembered him coming to Huddersfield with Alfred Clarke and joining their expeditions. F. A. Mason wrote (*The Naturalist*, 1925, p. 82): 'Clarke and Crossland were almost inseparable; the distance between their two homes at Huddersfield and Halifax respectively was a mere stroll to men accustomed to botanising over wild and extensive tracts of Pennine moorland, and Crossland's death at the end of 1916 was acutely felt by Clarke, who had watched with not a little pride the progress of his former protégé.' On the occasion of the autumn foray at Mulgrave in 1914 the Mycological Committee presented Charles Crossland with a silver salver in token of his 21 years' service. From some 'recollections' by A. E. Peck we learn that he had had a slight seizure, took the warning and as Dr. Ramsbottom says in his obituary: 'He carefully prepared for the end and portioned out his collection to various friends and institutions.' Drawings and paintings were sold to Kew. There are three or more folders of these with an occasional photograph by Alfred Clarke. Later his herbarium went to Kew and formed the nucleus of the British collection. Thus is preserved the work of one of the finest of the north country working-man naturalists.

But for meticulous recording there was none to beat Alfred **Clarke** (1848-1925). It was not everyone who could 'get on' with Alfred Clarke. Fortunately for Huddersfield Dr. T. W. Woodhead, then Hon. Director of the Tolson Memorial Museum, could and did; and so it came about that the museum inherited, on Dr. Woodhead's request, the books, drawings, paintings, herbarium and notes which Clarke left behind him, so neatly arranged and so precisely docketed. It would seem that this methodical ordering of the genera of fungi had, in itself, been satisfaction enough. It is doubtful if he himself made any use of this wealth of information. Alfred Clarke appears in some of the group photographs taken during those mycologically flourishing years round about 1895. Being an excellent photographer himself, he is not always in the group, but when he is, he is well to the front and conspicuous as a well-built, well-dressed, handsome man with level brows and strong chin. He looks haughty, unapproachable and impatient, as though he would not 'suffer fools gladly'. There is evidence that he had a dry, if not cynical, sense of humour. This estimate is in marked contrast to the warmly human, friendly and tolerant attitude of the general run of Yorkshire mycologists both then and now. He was not a sociable creature, but he kept up a steady friendship with a few chosen fellow-mycologists who were congenial to him, and he took keen enjoyment in the fungus forays. He was famous for his stereoscopic photographs. During my own researches into his life and work (initiated by an undertaking to assemble and arrange his papers bequeathed to the Tolson Museum) I endeavoured to find men

who had known him. I approached octogenarian naturalists, even a nonagenarian, in vain. And then by chance I found two younger men, both members of the Huddersfield Town Council, who, as boys, had known him and recalled him clearly. Councillor Armitage remembered living next door to him and recalled his mother's friendship with his wife. He used to run in and out of No. 16 St. Andrew's Road. 'I used to play with his son. It was, even then, strange to me that his father should, after every meal, retire to his study and spend no time with his family except at meal times.' One can picture the dour, solitary worker, almost hidden behind his methodically piled books and papers. Councillor Fred Harker had even closer contact with him for many years. He told me that when Alfred Clarke asked him if he would like to be his assistant in the firm of Armitage and Norton, accountants and he agreed, he was interviewed by the firm, one of his interviewers commenting drily: 'If you can get on with Alfred Clarke, lad, you'll do for us.' That was in 1898 and Fred Harker worked happily with him until he took his place on his retirement in 1922. The first thing Alfred Clarke did was to model the handwriting of his young assistant upon his own immaculate script. He himself wrote a regular faultless hand, somewhat erect; not the copperplate style of his day. In all the hundreds of pages of records made by him I have not yet found an error or blemish. He seems to have been fond of the young Fred in his grim way and often took him home to tea, and this without drawing him into mycology. Fred was all for games: A.C. did not care for games. He was most particular about his footwear: broad toes and no seams. He was a heavy pipe smoker, and sometimes smoked a special sort of cigarette. Councillor Harker can recall the aroma, possibly Russian, and how the word went round: 'Clarke's about.'

For the facts of his early life and how he came from a manse in Winchester to Huddersfield one may turn to the obituary notice by F. A. Mason in *The Naturalist* of March, 1925, with a photograph. In 1886 he was elected President of the Huddersfield Naturalists' Society, and for eight years served as Secretary, 1891-99. In 1892 he took an active part in uniting the Huddersfield Naturalist and Photographic Societies. In 1883 he had published a *List of Fungi of the Huddersfield District*, and thenceforth was in great request as a lecturer in mycology and as a leader of the annual forays. By this time he had aroused the interest of Charles Crossland of Halifax and together they attended the Y.N.U. Meeting of 1888 in Leeds and the associated Fungus Foray at Bramham and Harewood where they met George Masee. From that year to 1924 he rarely missed a Y.N.U. Foray. His contribution to the forays was characteristic: printed cards for the classification of the fungi collected, beautiful drawings of them and his unrivalled collection of stereo-photographs. It was natural that any addresses he gave should be of a practical sort on method of preparing illustrations. To his faithful recording the Mycological Committee was in part indebted for the high standard it reached in the Y.N.U. and in Britain. British mycologists, M. C. Cooke, Carlton Rea, Worthington Smith and, of course, George Masee, kept up a close correspondence with him, and their letters, preserved in the Tolson Museum, show clearly the respect in which they held him. F. A. Mason (in the obituary he wrote in *The Naturalist*, 1925) says: 'Clarke was responsible for the discovery of many species new to the county . . . and to science . . . He had for some time been engaged upon a revision of Masee and Crossland's *Fungus Flora of Yorkshire* with a view to incorporating the additions of the last twenty years. On this strong base, together with the gradual weakening of the Woolhope Club, the British Mycological Society was built, in 1896.' I feel convinced that it was at his house, No. 16 St. Andrew's Road, that the idea was seriously considered during the autumn foray in Huddersfield, 1895. The excellent photograph published in *Trans. B.M.S.*, 5, 1915, must have been taken on this occasion. Seated in the middle is M. C. Cooke in his old stove-pipe hat; behind him the Rev. Wm. Weekes Fowler, and on either hand Charles Crossland, stout and assured; James Needham spare in frame with his humorous, understanding smile; Carlton Rea genial, dominating, peppery, with his white stock, and white cuffs with cuff-links and his monocle some of us recall so vividly; and George Masee, peppery too (one can almost see his red hair). Surely the photograph was taken by Alfred Clarke in his garden. There is a letter of November 17th, 1895, from Carlton Rea, which acknowledges a print and continues: ' . . . there is, however, one regret I feel about the group and that is that your worthy self was not included. However, I know you cannot at once be the *deus ex machina* to work the lens and also be impressed by the sun picture.' Alfred Clarke's somewhat unusual herbarium is stored in the Tolson Museum: a separate folder for

every genus of fungus recognised in his day; in each folder some or all of the following: dried specimen, photograph, drawing, painting, correspondence, references, other notes. Edward J. Walker (1863-1945) of Huddersfield was one of his disciples. It was from his nephew that I received a print of this historic photograph.

Two Yorkshire mycologists left their county for Liverpool: J. W. Ellis (1857-1916) and J. A. Wheldon (1862-1924). In my own early fungus collecting between the years 1911 and 1922 among the Lancashire sandhills I used the 'Fungus Flora of



G. E. MASSEE
C. CROSSLAND

Rev. W. W. FOWLER
M. C. COOKE

J. NEEDHAM
CARLTON REA

PHOTOGRAPH TAKEN IN HUDDERSFIELD, 1895

These seven (including Alfred Clarke, the photographer) had probably just planned the autumn foray for 1896 at Selby, and agreed to propose there the formation of a British Mycological Society.

Wirral' compiled by John W. Ellis, M.B., F.E.S., as well as Masee's *Fungus Flora*. Dr. Ramsbottom says he specialised on micro-fungi and joined the B.M.S. forays. He recalls him as keen, pleasant and able. J. A. Wheldon I knew personally, though only recently have I learnt that he was pharmacist to H.M. Prison at Walton. I accepted him as a particularly well-informed naturalist with specialised knowledge of fungi, liverworts, mosses and lichens of the Lancashire coast. Between 1880 and 1883 he had collected plant rusts in the Scarborough, Northallerton and Bedale

districts. He used to take his lichens to Miss Lorrain Smith at the Natural History Museum where he had a high reputation for keenness and care. His son Harold took over the fungi and wrote a key to agarics.

And now to this excellent band of collectors, my 'Grand Period' in the north of England, one more name must be added: George Edward Masee, F.L.S., V.M.H. (1850-1917), a Yorkshireman who stands alone, more fortunate than the rest; one who, not without a struggle it is true, was able to escape from uncongenial tasks and to give his undivided attention, time and energy to the collecting, classifying and naming of fungi. I never met him, but I am proud to number among my friends Miss E. M. Wakefield, O.B.E., who was for five years his able, indispensable second when he was the Principal Assistant (Cryptogams) in the Herbarium of The Royal Botanic Gardens, Kew, and who succeeded him in this post when he retired in 1915. I always regret that I did not meet his gifted daughter, Ivy, for we had friends in common in Croydon who planned to bring her to see me at Royal Holloway College, but somehow the plan never materialised. However, by a happy chance for me, I was fortunate enough to meet his eldest son, Dr. Masee, O.B.E., the entomologist at East Malling Research Station, and to have a chat with him. And thus I feel, as with many another Yorkshire mycologist, I can serve as a link with G. E. Masee.

This photograph shows the unusual head and face which I should not have guessed to be Yorkshire: it is in striking contrast to the Yorkshire heads of C. Crossland and J. Needham in the same group. The high forehead, the height increased by incipient baldness, is framed by a frizzy coronet of (ginger) hair, the brown eyes are small and keen behind round spectacles, there is an Edwardian moustache. But there is an earlier photograph in the *Gardeners' Chronicle* of February 24th, 1917, showing a dome of careless curls falling over the high forehead, keen eyes, without glasses, a good straight nose, slight moustache and neat young beard. It is a striking head and an unusual arresting face. He appears to have been something of a dandy: he is wearing an elegant check jacket, low starched collar, bow tie and tie pin, which, his son told me, he had worn every day since his father's death.

Tradition has it that George Edward Masee was a 'character'. All these mycologists at the turn of the century seem to have been characters in their several ways, but perhaps he more than most. Every mycologist knows of Masee; every mycological student has used one or other of his books. Indeed to my student-generation 'Masee' meant a book not a human being. There was a red book, Masee's *Diseases*; and there were four dark green volumes, Masee's *Fungus Flora*. And lucky we deemed the student who managed to buy the 1916 Masee *British Fungi, with a chapter on Lichens* with coloured plates. (I believe the original paintings used for these plates were by Ivy Masee.) I thought he had no University education as he had no University degree, but his son told me that he was at Cambridge for over a year but was 'sent down for throwing one of his professors into the River Cam.' The letters after his name, F.L.S. and V.M.H., show him to have been a Fellow of the Linnean Society of London and to have been awarded the R.H.S. Victoria Medal for services to Horticultural Science. He had zest for his chosen career, tremendous drive and an insatiable thirst and impelling force for work. His son relates a story which illustrates how hard he worked—and how very hard they did work, these old mycologists! He could still recall the tremendous, suppressed excitement among all the six children at the announcement by their father that they should go to the Richmond Hippodrome. There were fresh collars and a general sprucing up and off they set by train to Richmond from Kew Gardens station and, once arrived, they formed into a crocodile to march to the Hippodrome. At the gates consternation and anxiety! Tickets had been purchased for six, not eight! Then George Masee turned to his eldest son and said: 'We two must work however,' and back they turned together, to the anguish of the boy. The point was, that the father could not spare the time and the eldest son must not lose an opportunity to advance his knowledge. Dr. Masee added smilingly that he probably became absorbed in helping his father, but he remembered very clearly the pang with which he heard from the others in bed that night, of the exciting things at the Hippodrome. There are other anecdotes told of this exceptional industry.

G. E. Masee was born in 1850 at Scampston in East Yorkshire and his father, a farmer, meant him to be a farmer too, but the son did not incline to farming. He liked drawing and was interested in nature. He was, accordingly, sent to the York

School of Art where he won the National Medal of the year for drawings of flowers from nature. In his early youth he appears at one time or another to have taken all manner of jobs for a livelihood. It is said that at one time he joined the Foreign Legion, and there is a letter in the Kew Herbarium written December 6th, 1917, to Mr. (later Sir) Arthur Hill, Director, by Mr. E. G. B. Meade-Waldo of Rillington, York, which states that 'G. Masee of Kew who died not long ago was born here and was footman in this house when a youth.' However, he did help on the farm: ploughing, sheep-washing, threshing, milking, which exercises proved later to have been valuable experience when giving practical advice to agriculturists.

Meanwhile he had been taken in hand by a relative of his mother, Dr. Spruce, the botanist and traveller, and when not working on the farm he studied chemistry, physics and botany; and finally, at the suggestion of Dr. Spruce, he went to the West Indies and South America to study plants in general and to collect orchids. On his return his mother prevailed upon him to stay at home and it was at this time, I believe, that he specialised in fungi and plant diseases in the intervals of farming. On his father's death he went to Kew, and worked in the herbarium as a free lance, helping M. C. Cooke and getting further experience in systematic mycology, and this to such good effect that on the latter's retirement in 1892 he was appointed Principal Assistant in his place. He took up his official duties the following year and served until 1915. (How he maintained himself during these years at Kew before 1893 is not clear.) After his retirement, on age limit, March 31st, 1915, he went to live at Sevenoaks and died there at the age of 67 and was buried in Richmond cemetery Wednesday, February 21st, 1917. While at Kew he became an able naturalist and a good draughtsman. There is a valuable series of paintings in the Natural History Museum acquired in 1892, some of which had been used by M. C. Cooke in his *Illustrations* (1881-90), and, it would seem from an appreciation in the *Journal of the Kew Guild of 1908* that he was a vigorous and entertaining lecturer. His lectures at Kew were popular: not for nothing was he called Professor. The writer says: 'He made botany a romance' . . . he seemed to 'pitch the subject before his class . . . and help them by means of comment, explanation, joke and gibe to take in as much as their capacity would stand' . . . 'he had the happy knack of imparting information with good humour . . .' One lecture on the treatment of plant diseases ended with the exhortation: 'Above all, watch and spray'. But 'the man who behaved like a fool was pretty sure to be called one' by George Masee, and on forays he made scathing remarks about 'one-day mycologists'. He was all a Yorkshireman is expected to be in the way of directness and outspokenness, and he gave a bore short shrift.

He knew personally the Rev. M. J. Berkeley as well as M. C. Cooke and attributed—no wonder—much of his success to this fortunate acquaintance. He, in his turn, willingly passed on his acquired experience and knowledge. He was in close touch with Yorkshire mycologists. From his laboratory at Kew, Masee was guide and friend to the Yorkshire mycologists working in the field. He had been secretary of the old Scarborough Field Club, founded in 1882, and was an old member of the Y.N.U. and one of the original members of that small and highly select Mycological Committee, and in 1914 its chairman. He corresponded freely and sent his fellow members reprints of his numerous papers. There is a considerable packet of them in the collection of Alfred Clarke in Huddersfield. His greatest practical contribution to Yorkshire mycology was to produce, along with C. Crossland (who was working diligently in the field with the steady help of James Needham), the *Fungus Flora of Yorkshire*, 'a complete account of the known fungi of the county' published in 1905 as volume No. 4 of the 'Transactions of the Y.N.U.' The introduction begins: 'After eleven successive Annual Fungus Forays within the county, added to records previously and contemporaneously made, it has been considered advisable to summarise the results in the form of an annotated list of known Yorkshire species.' Masee had of necessity a different approach to species. As he says in a paper entitled 'Mycology new and old' which he wrote for *The Naturalist* (December, 1912): 'Mycologists who are familiar with the fungi as seen in their native habitats . . . and have learned the direction and range of variation exhibited by each species . . . are not particularly impressed by what are known as "type specimens"', and he proceeds to put forward the approach of the more up-to-date mycologists with their microscopes. There is no doubt his friends and followers in Yorkshire took the hint and the work proceeded there on more modern lines.

George Massee had his critics, for while covering a great deal of ground he lacked the scrupulous exactitude, the integrity, of his fellow Yorkshiremen, who worked more humbly though no less assiduously. Dr. Ramsbottom writes: 'Though often brilliant he was often careless . . . if he had had any capacity whatever for taking pains he would have been a genius.'

In the gradual transition from the collecting of fungi for sheer joy of it (and the recording of them culminating in the *Fungus Flora of Yorkshire*), to a more scientific approach, a new generation of mycologists was growing up and the Mycological Committee gradually changed in character, passing into a later phase where the influence of the Universities is felt. The active participation of Dr. Harold **Wager**, who was born and died in Yorkshire, is a sign of these times. In the new minute book which was begun by A. E. Peck, 'convener', we read of a business meeting held September 29th, 1915 (only five members present) to appoint the Mycological Committee for 1916. On it, it is good to find that some of our old friends are still to serve: W. N. Cheesman, J.P. of Selby; Chas. Crossland of Halifax; Alfred Clarke of Huddersfield; Geo. Massee, V.M.H., F.L.S., of Kew; but the chairman is Harold W. T. Wager, D.Sc., F.R.S., F.L.S., and others listed are Sir Henry Hawley, Bart., of Bunted, Sussex; Thos. Gibbs of Werksworth; J. W. H. Johnson, M.Sc., F.L.S., of Walton; C. H. Broadhead of Thongsbridge; M. Malone of Bradford; Thos. B. Roe of Scarborough; A. R. Sanderson of Bradford; Robt. C. Fowler Jones of York; and Ivy Massee and Charlotte A. Cooper. Perhaps the entry of women had an influence, too, and emphasised the change. Up to now they had been in the background. It was one of James Needham's quiet jokes that he tested his edible toadstools on his wife. For the most part they had kept the homes going so that their menfolk could go off collecting and return home to find warmth and food.

A few gave ladylike help: Amy Rose, whom I knew later as Mrs. Carlton Rea, made beautiful paintings of toadstools, which are the records of the 'rare finds' of those days. Some of us were privileged to see these paintings on the occasion of the autumn foray at Richmond in 1956, seventy-five years after the first Y.N.U. fungus foray, when her daughter Violet came with her husband, Dr. Astley-Cooper, and exhibited them after the famous dinner party given by the Chairman, Arthur Collinge. Some of us still have the menu designed by Mrs. Astley-Cooper.

M. C. Cooke commandeered his family in times of stress. I once met Miss Cooke and heard her tell how she and her brothers and sisters washed slides and made notes and generally ran around for their Victorian papa. Alfred Clarke's daughter, later Mrs. C. E. Moss, drew and painted toadstools under protest. It was different, however, with **Ivy Massee**. True she began by painting for her father, but later for herself. In the report of the foray of 1912 we read that she 'was most active in the field collecting and when indoors painting.' At the next meeting, the 25th Annual Meeting of the Mycological Committee at Sandsend, 1913, she read a paper on 'The Genus *Mycena*' and exhibited a 'series of beautifully executed drawings of micro-structure'. It was at this meeting that she was proposed for the committee of 1914 which 'remained the same with the exception of the omission of the late James Needham and the addition of Miss Ivy Massee of Kew'.

But there was already on the committee a woman mycologist in her own right: of her own volition; 'an ardent field worker, an active disinterested collector'. Miss **Charlotte Cooper** of Robin Hood's Bay seems to have been the first woman member, and accepted graciously by even the exclusive A. E. Peck, for more than once we read of the pair of them 'representing the Mycological Committee' at Y.N.U. meetings. She was a serious collector in Yorkshire and later in Hertfordshire. I knew her and recall with pleasure her smiling face and clear fresh gaze and comfortable presence. I remember her on B.M.S. autumn forays in the early nineteen-twenties and think of her in company with Miss Gulielma Lister and Miss Annie Lorrain Smith: three kindly, modest, able women, lovely people, with a welcome and a helping hand for a new member. We have recently commemorated Miss Lister's centenary year: she was born in 1860. I have not heard that, except as a referee for Mycetoza, she worked with the mycologists of the Y.N.U. as she so generously helped the Essex Field Club. I love to recall her gracious presence. She was a woman of distinguished appearance (despite the old clothes one made a point of wearing on forays in those days), slender, erect, with good carriage and springing step, a quakeress and a perfect lady: so far as my experience went, unerring in word or deed. She was a staunch friend of Miss Lorrain Smith, lichenologist at the

Natural History Museum, who also served as a referee to the Y.N.U. She, by contrast, was stout and 'homely'; but her fine strong character shone through those large, grey, all-seeing eyes (surely with second sight?), and from the broad, smooth brow. There must have been hair under the old woolly cap, but one was not aware of it.

But to return to Dr. Wager of whom, too, I think with pleasure and gratitude. He was a handsome, well-built man and moved easily and gracefully; courteous always and approachable, ready with encouragement. I recall him most vividly during the unexpectedly long B.M.S. autumn foray when we were 'marooned' in Baslow Hydro on the occasion of the great railway strike of 1919. He was President of the B.M.S. that year, and so one finds an 'apology for absence' in the minutes of the meeting of the Y.N.U. Mycological Committee at Helmsley which he should have chaired. But they were fortunate in their chairman for he was much in demand as a presiding officer. In 1905 he was President of Section K at the meeting of the British Association in South Africa, in 1913 President of the Y.N.U., and in 1910 and 1919 of the British Mycological Society. Willis Bramley writes: 'One did not get to know him well. Quite often he had other things to attend to and I picture him quite often with a large bulky envelope with H.M. Inspector of Schools on it. One evening I was looking at some diseased Shepherd's Purse with the beautiful white *Peronospora* on it. Wager was passing and stopped to enquire what I was examining. On my saying *P. parasitica* he said, "Really, it is a most beautiful thing. I've written a paper on it but should never have recognised it. I was using preserved material."' He was, as is well known, one of the first and best of the early workers on cytology of fungi.

In the greatest contrast, except that he, too, was well built, was the Convener A. E. Peck. I had the 'low down' on A.E.P. (and it was very low in parts) from Mr. Walsh of Scarborough, who had taught his four boys. I asked 'Whatever turned a man like that to fungi?' He suggested that walking in the country with a purpose appealed to him. Also he had abundant energy. Dr. Ramsbottom once told me that at one time he had typed out 'six fat copies' of a list of fungi of South Africa—no one knew why. He wrote very full minutes, too full for the committee and chairman. Dr. Wager is reported as having refused to sign anything but relevant matter. He made a practice of writing an article for *The Naturalist* each year based on the finds of the foray. Then there is the map I found by chance in Scarborough: a large, folded map of Yorkshire on which he had marked with bold ink rings the towns where Yorkshire mycologists lived and the places where they had met for forays. Miss Wakefield says he was mainly a photographer. He certainly was an expert photographer and in this and in his energetic recording he had a high regard for Alfred Clarke. But he would like to have been an expert systematist. No doubt he enjoyed in his office as convener a feeling of control over the body of experts on the committee he served. His motives were not easy to fathom at any time. At one time perhaps always, he was 'out' to make money. He said so. He once said he had meant to be a millionaire. At one time he would lend small sums of money at interest. He had certain fantastic economies: both Miss Wakefield and Mr. Walsh have told me they 'never had a letter from Peck on decent notepaper'. Miss Wakefield said all the communications she received from him were on the backs of shareholders reports, balance sheets and the like, enclosed in re-directed envelopes, an unusual economy before the two world wars. She assumed his business was the collection of waste paper: it may have been in part, but Mr. Walsh said he was 'in coal' and very rich. Nevertheless, although not perhaps the most admirable, A. E. Peck must, I think, be recognised as the most outstanding personality dominating the Mycological Committee from 1915 onwards... another 'character'... The photographs printed in *The Naturalist* illustrate the verbal description given to me by Mr. Walsh... 'a fine figure of a man'... 'at one time he grew a beard... to look even more important,' said Mr. Walsh with a twinkle, 'for he had a good opinion of himself.'

Of the general members of that 1916 committee, apart from Mr. Cheesman and Miss Cooper, the only one I have met is Sir Henry Hawley who was on Clare Island in 1912, the year I joined Lloyd Praeger's survey. He was a pure naturalist with a quiet manner. He came on the survey with Mr. A. D. Cotton, another good friend, by the way, of the Y.N.U. Neither was able to join the Yorkshire forays much, but they were persuaded to keep in touch as referees: Sir Henry for Pyrenomycetes. Thomas Gibbs, who died on February 8th, 1919, seems to be a link between the old group and the newcomers. He was a big man, tall and thin, with a moustache,

kindly and modest in bearing. He lived in Sheffield and so collected more in Derbyshire and compiled a Fungus Flora of Derbyshire, but he studied Yorkshire fungi from 1899 and discovered many uncommon species. He wrote the report of the Y.N.U. foray at Masham, 1902. He was a foundation member of the B.M.S. When W. N. Cheesman's paper on 'A Contribution to the Mycology of South Africa' (read before the Fellows of the Linnean Society on June 4th, 1908) was published (*J. Linn. Soc.*, **38**, 408-417, 1909) there was a note on the coprophilous fungi with a drawing (plate 36) by Thomas Gibbs, and thanks to George Masee and Miss Lorrain Smith for much assistance in determining species. T. B. Roe was Peck's assistant in his business and his hobby. When Peck decided to concentrate on agarics he passed on the micro-fungi to Roe. In the Alfred Clarke collection there are a great many blue post-cards sent by him from 9 York Place, Scarborough, about fungi causing disease of leaves. He has been described to me as 'a very charming man'. When he left Scarborough for Leeds he seems to have felt free to collect agarics again, and Dr. Sledge remembers him as an active member of the Naturalists' Club there, and Miss Lindsay Anderson remembers him gratefully as having 'started her off' on fungi. J. W. H. Johnson is remembered by some of the older members of today's committee as a 'pleasant, stout man'. He was a sewage engineer and bacteriologist and chief chemist to the West Riding Rivers Board, so his interest was professional to some extent. He was well read and well informed and, I have been told, wrote charming letters. M. Malone of Bradford was another pleasant, kindly and humorous colleague.

F. A. Mason (1878-1936) was a professional chemist as well as a good, all-round naturalist. He was the Director of the Biological Laboratories of Murphy and Co. of Headingley, Leeds. His work was concerned with yeasts for brewing. He knew the fungi and was a systematic collector, and along with Alfred Clarke was in touch with Carlton Rea. He was a man of considerable ability, methodical and the inspirer of the *Catalogue of Yorkshire Fungi*. On the death of Alfred Clarke he became recorder to the committee, and drew up the records which had been kept by Alfred Clarke since the publication of Masee and Crossland's *Fungus Flora*: nearly 1,000 additions. He was very popular and those who can today recall him, Willis Bramley, Jennie and Dr. John Grainger, Dr. Sledge, Dr. Hincks, have described him to me in affectionate terms. He was short, stout, rubicund and with a memorable smile, almost a friendly grin. He was a good mixer and always glad to help beginners. This brought a new warmth to the forays and opened the committee to young and new collectors. It was due to his help that Willis Bramley became drawn to the fungi and elected to the committee of 1921. W.B. writes: 'A jovial companion, and in the many hours of his company I never knew him to lose his sunny nature though sometimes it must have been strained severely.' Dr. Ramsbottom writes in the same strain: 'He was always welcomed at any B.M.S. foray he attended. He had a wide knowledge of mycology and I learned much from him about out of the way aspects of the subject. He had a great fund of Yorkshire stories.' Another young recruit he encouraged on the committee of 1921 was Daisy Hilary, who died, to our loss, a year or two ago. She was one of those graduates of Leeds University, thorough, efficient and scientific in their collecting who 'stormed the citadel', as Dr. Grainger puts it. The committee had become a coterie guarded by the formidable Alfred Clarke and A. E. Peck.

In this kindly acceptance of new members F. A. Mason was supported by another, altogether different man, Robert C. Fowler Jones (1873-1951), fan architect by profession, a stamp-collecting bachelor. He was of medium height but well built with moustache and beard, 'a Victorian gentleman of distinguished appearance.' He turned to the collection of fungi because he 'liked the look of them', and such was the standing of the Mycological Committee he was proud to be included in it. He considered himself a learner and privileged to be with the pundits. On the other hand, his natural social charm and ready smile gave him easy entry into the 'almost closed, dour and hard-working "brigade" of the first quarter of the century, with their goose-greased boots'. The younger generation remember him with affection and say that everyone loved him. He collected, but had not the zeal for identification. Dr. Sledge classifies him as a patron rather than a student of mycology. He is remembered by those on foray with him for his kindly fatherly manner, for his readiness to help, his thoughtfulness in every-day things. It was he who provided pieces of ribbon for each table-napkin. It was he who had the bit of string, the pin, the spare knife, a cough-drop, a post-card, needle and

thread, sticking-plaster, and all the time genial, always at hand to help. He seemed to give a blessing to it all. To Fowler Jones the forays were a social occasion, but he valued greatly the work of those better informed than himself and gave generously of his money to help it forward. He paid up any debts outstanding at the end of the year. He sponsored the publication *A Catalogue of Yorkshire Fungi* by the late F. A. Mason, F.R.M.S., completed from the records of the late Alfred Clarke by Dr. John Grainger in 1937. He supplied copies to the workers 'with compliments from Mr. R. C. Fowler Jones, Trinity House, Denton Road, Ilkley.' On his death there was a bequest of £500 to the Y.N.U., half of it earmarked for the use of the Mycological Committee. This was his last service. I have heard tell more than once of what was almost his last foray on his 70th birthday. It was the occasion of the 60th Autumn Meeting of the Mycological Committee, at Burnsall, the first gathering to welcome Mr. and Mrs. E. W. Mason, and the meeting which elected A. A. Pearson, Chairman for 1944. It was a long trek and Fowler Jones strode along with the party but at Bolton Abbey he let them hail a coal-cart and was driven back to headquarters, ahead of them.

Thomas **Petch**, B.A., B.Sc. (1870-1948), who revised the section of the catalogue dealing with the Hypocreaceae, was born in Yorkshire, but when he married Dr. Plowright's daughter he settled in King's Lynn, Norfolk, where he reached a good age and was known to many of us. Willis Bramley writes of him with enthusiasm: '... a fine man ... faithful member of the Y.N.U. ... generally collected on his own ... at a favourable spot would often spend three or four hours in a few yards ... was once seen in the midst of a large brier bush through which he finally cut his way ... there was little left of the bush and he had taken probably every infected insect in and under it ... a very good correspondent and would take a great deal of trouble in helping anyone.' In south-east Yorkshire he collected myxomycetes assisted by Arthur Lister. He was then living at Hedon-on-Hull, where he is ringed on Peck's map. Dr. Ramsbottom writes: 'Tom Petch was one of the greatest naturalists I have been privileged to know ... he became interested in mycetozoa ... and when a Government Mycologist was required for Ceylon I believe it was on Lister's recommendation that Petch was appointed ... doubtless Masee supported him. The amount of work Petch got through was amazing. His papers were written in a characteristic clear hand with page after page without alteration. His style was clear but concise and without frills of any kind. I had to edit many of his papers, and this simply meant reading them ... He was quiet in manner but of strong, often outspoken opinions ... he had a north country sense of humour and in company to his taste was a most pleasant companion. He disliked lecturing but lectured well. He should be made much of, he was proud of being a Yorkshireman and Yorkshire should be proud of him.' This is a story Petch used to tell against himself: When he was appointed as mycologist to Ceylon his father-in-law said to him, 'I don't know why they have chosen you, you know nothing of fungi so you had better take my copy of Saccardo with you.' Mr. Mason in his Y.N.U. Presidential Address referred to the 'oft-quoted dictum of T. Petch that a mycologist must collect his own specimens and know them under all conditions.'

Other names on Peck's map are Thos. **Birks** of Goole, a foundation member of the B.M.S.; A. R. **Sanderson** of Austwick, a friend of Chris. Cheetham; Walter W. **Strickland** of Bridlington, who collected fungi in East Yorkshire, and presented a great number to the Natural History Museum; and W. A. Thwaites.

W. A. **Thwaites** of Masham was gamekeeper on good terms with the mycologists and learned to collect for them. I shall let him speak for himself by quoting from a long letter I received from him when he was 85: 'It seems like old times to receive a letter from a mycologist ... My first contact with the naturalists was about 1901 when they came to Masham for a foray, and Mr. Forbes Forester on Swinton Estate put me in as guide as I knew the estate from end to end, and when told the kind of locality they wanted, could decide at once where to take them. I knew nothing about mycology, but simply acted as guide. Mr. Crossland got me interested and said they were compiling a Yorkshire Fungus Flora and as there were no records for this district would I care to send specimens along to him of anything at all in the shape of fungi, and so I sent off a box every night by post from August to some time in November, the result of which you will see in the report. Being a joiner on the estate, I had to cross fields and woods to the various farmhouses every day to work, and so had every opportunity to gather larger fungi on my way, and at dinner-time to go into the various woods near the farms and look for the smaller

things. I was given a free run over all the woods and the nursery where the young trees were grown from seed and so had a good chance to get all kinds of things from toadstools to plant diseases and forest trees down to seedlings for which I had to use a pocket-lens to see at all. It is a very fascinating hobby as you never know what shape or size or colour you are going to find next. You will see by enclosed reprints the great variety of material I was able to pick up . . . When the *Fungus Flora* was completed Mr. Crossland did not want so many sending, only anything out of the ordinary and so things quietened down for some years. Then Mr. Peck unearthed me again and I acted as guide for the other Masham forays . . . When Mr. Masee was writing on the larch disease . . . for the Board of Agriculture, I supplied him with fresh material to work on . . . Shall never know how to thank Mr. Crossland for all his kindness in helping and encouraging me in this study, also Mr. Masee and Mr. Clarke. They were never happier than when teaching and explaining to you . . . I was born in Masham and lived in the same house for about eighty years.'

C. H. **Broadhead** of Thongsbridge is not on Peck's map but he was on the committee of 1916 and has been described as a true mycologist. Nor do the following names appear, although, like Birks, they are on the list of foundation members B.M.S. with addresses in Yorkshire: U. **Bairstow** of Halifax, A. **Douglas** of Thirsk, J. E. **Sutcliffe** of Bradford, J. W. **Sutcliffe** of Halifax.

Although with a business firm in Cleckheaton all his life, A. A. **Pearson**, F.L.S. (1874-1954) was not a Yorkshireman. But he was our very good friend and helper, and almost to be counted among the living, so vivid a personality is he still. And yet he was in the old tradition, introduced to fungi and indeed trained in mycology by Dr. Ramsbottom, who proposed him for membership of the B.M.S. in 1911. He was made an Honorary Member B.M.S. in 1946. He was invited by F. A. Mason in 1929 to join the Y.N.U. and he never failed the Mycological Committee. He was available with help for Dr. Grainger when he was preparing the catalogue. Willis Bramley writes: 'To A. A. Pearson most members owe a great deal. When in the field or workroom he was ready to take any amount of trouble with the veriest tyro who showed any interest at all. He was always ready to examine parcels of agarics sent to him and generally an answer could be expected by return of post. When fungi were scarce and the terrain obviously unproductive his long legs could cover the ground at a great pace as some of us have experienced.' I met him so long ago as 1917 on that, to me, most memorable B.M.S. autumn foray at Shrewsbury, when he seemed one of the young ones along with Harold Wager, Elsie M. Wakefield and John Ramsbottom, all good friends of the Y.N.U. as I was to discover when I joined it nearly forty years later. I hope that before his memory fades someone will make a pen portrait of him, so buoyant, so gay, so debonaire. That sounds French. He was fond of France and an active member of the *Société Mycologique de France*, and when the two societies joined in an autumn foray in France in 1953 he delivered the Presidential Address in French.

Walter **Watson**, D.Sc. (1872-1960), another Honorary Member of the B.M.S., was born near Wetherby and although he lived and worked in Devon he looked the Yorkshireman he was: a man of remarkable energy and a lichenologist of world-wide repute.

I ask myself, what is it that this goodly array of honest workers have in common. What was the attraction of fungus collecting for them? In an unsigned article in the *Yorkshire Post* of 1913 two explanations are offered: first, the possibility of discovering and perhaps naming a new species; second, the uncertainty of appearance of fungi, 'every foray has the excitement of a border raid, the very word suggests the uncertainty of the booty.'

But there is more to it than this. Perhaps they belong in their 'single-eyed simplicity' to Leonard Woolf's 'divine sillies'.

[I have compiled a card index of Yorkshire mycologists and shall be glad of corrections, additions and other information. I have also started a collection of old photographs for the Mycological Committee and shall be grateful for additions.—E.M.B.]

SPRING FORAY, HOLME-ON-SPALDING MOOR, APRIL 21st-25th, 1960

W. G. BRAMLEY

SOME twenty members, friends and visitors attended the Spring Foray which proved profitable mycologically and enjoyable socially. It was a great pleasure to have our old Chairman and Past-President of the Union, Mr. E. W. Mason, with us once more if only for a fleeting visit, and we thank him and Mrs. Mason for going to some inconvenience to look in on our deliberations. We were also pleased to welcome Professor Robertson and Dr. Stanton from Hull University on one day.

Normally no account is taken in these reports of the social happenings during forays, but the presentation of a beautiful carved oak kist to our Secretary, Miss Jennie Grainger, cannot be passed over. For twenty-one years Miss Grainger has organised our forays and but for the hard work she has put in, especially during the war years, these meetings would not have been so successful. It was mainly due to her that the Committee was able to function throughout the war. Together with two or three other members, Miss Grainger was strongly against foregoing the forays, and but for her determination in finding accommodation during those difficult days the forays would have lapsed. Long may she be spared to guide and keep us in order.

Most time was devoted to the area round Holme Hall. In a small coppice excitement was caused by the finding of some couple of dozen specimens of *Mitrophora semilibera* (= *M. hybrida*) on heavy soil amongst short grass, and Mr. Graddon had to be taken later to see them growing *in situ*. The species is apparently rare in Yorkshire, the last published record being for Hornsea Mere in 1935. The writer had also seen it about that time at Bolton Percy.

The lake side at Londesborough Park provided some interesting discomycetes and a quantity of *Rutstroemia calopus* was collected from *Glyceria*. Here also an old bonfire site produced *Galactinia violacea*, *Tricharia gilva* and *Geopyxis carbonaria*, the first two in quantity and extensive gregarious colonies, the last as scattered individuals and all in excellent condition. Goodmanham was not so productive but a discomycete-like fungus found by Mr. Graddon on *Epilobium hirsutum* proved to be *Ciliopora albidia*.

Under our Chairman's guidance a brief visit was paid to the 'Land of Nod' at Seaton Ross. Almost at once *Rutstroemia calopus* was found and discussion tended to agree that many so-called rare fungi were only so because they were not looked for at the proper time, though this is difficult to assess when only one or two records are available. This area is on 'blow away' sand and high wind during the week-end had blown much of it on to the vegetation by the canal so that a thrush's nest some two feet from the ground was half-filled and the eggs nearly buried. A lucky 'dip' produced *Tapesia evilescens* on *Phragmites*, but the base of much of the host was covered with sand and consequently many typical *Phragmites* fungi could not be found. *Trametes rubescens* was also collected here, whilst *Puccinia carduorum* on one plant only of *C. nutans* was unexpected.

During the foray several agarics were found and our thanks are due to Mr. R. Watling for their naming. *Urocystis eranthidis* on Winter Aconite has not apparently been recorded for Yorkshire before, though the writer first saw it near Malton some three years ago and also at Nun Appleton, York, the year following. In the latter locality the host had been under observation for some years without signs of the fungus, and even when found only three or four leaves were infected. At the Malton site heavy infection was noted in 1958 though in the previous year there had apparently been no infection. Laboulbeniales have for most mycologists only an academic interest, but our entomycological chairman has been paying attention to them (Hincks, *Nat.*, 1960), and it is pleasing to note a new Yorkshire record for this foray.

Thanks are due to all who helped with collecting and especially to W. D. Graddon for naming Discomycetes, to Messrs. Collinge, Hincks and Watling for the Basidiomycetes and to the Commonwealth Mycological Institute for help in other groups.

† Not listed in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 61.

* " " G=Goodmanham " " H=Holme Hall "area "
L=Londesborough Park S=Seaton Ross

DISCOMYCETES

- †*Dasyscyphus controversa* (Cooke) Rehm, on *Phalaris*, L.
 **D. fugiens* (Bucknall) Mass., on *Juncus*, S.
 **Galactinia violacea* (Pers.) Le Gal. (M. & G. sub. *Aleuria*), L.
 **Geopyxis carbonaria* (A. & S.) Sacc., L.
 **Helotium vernalis* Dennis, L.
 **Mitrophora semilibera* (DC. ex Fries) Lev. (*M. hybrida* (Sow.) Boud.), H.
 **Mollisia discolor* (Mont. & Fr.) Phill., L.
 †*Ombrophila violacea* Fr., L.
 **Orbilia inflatula* (Karst.) Karst., L.
 †*Pezizella amenti* (Batsch) Dennis, L.
 †*Pyrenopeziza escharodes* (B. & Br.) Rehm, G.
 †*Rutstroemia calopus* agg., on *Glyceria aquatica*, L.
 **Scutellinia setosa* Kunze, H.
 †*Tapesia evilescens* (Karst.) Sacc., on *Phragmites*, S.
 **Tricharia gilva* Boud., L.

PYRENOMYCETES

- †*Laboulbenia vulgaris* Peyr., on legs and elytra of *Bembidion tetracolum*, S.
 **Hypomyces aurantius* (Pers.) Tul., on *Tremetes gibbosa*, H.
 **Calospora platinoides* (Pers.) Sacc., on *Acer*, H.
 †*Chaetosphaeria callimorpha* (Mont.) Sacc., on *Rubus*, H.
 **Cryptospora suffusa* (Fr.) Tul., on *Alnus*, L.
 **Eutype acharii* Tul., on *Acer*
 **Thaxteria* (*Chaetosphaeria*) *phaeostoma* (Dar. & Mont.) Booth, on *Ilex*, H.

BASIDIOMYCETES

- **Puccinia carduorum* Jacky. III on *C. nutans*, S.
 †*Urocystis eranthidis* (Pass.) Ainsw. & Sampson, on *E. hyemale*, H.
 **Galerina mycenopsis* (Fr.) Kuhn., S.
 **Tubaria* (*Naucoria*) *conspersa* (Pers. ex Fr.) Fayod, S.
 **Fomes ignarius* (Linn.) Fr., on *Salix*, S.
 **Trametes gibbosa* (Pers.) Fr., on ? *Ulmus*, H.
 †*T. rubescens* (A. & S.) Fr., on *Salix*, S.

COELOMYCETES

- †*Ciliospora albida* (Mass. & Crossl.) Grove, on *Epilobium*, G
 **Dinemosporium hispidulum* (Schrad.) Sacc., H.

HYPHOMYCETES

- †*Coniothecium betulinum* Corda, on *Betula*, S.
 **Dendryphium commosum* Wallr., S.
 †*Papularia arundinis* (Corda) Fr., on *Phragmites*, S.
 **Periconia byssoides* Pers. ex Corda on *Urtica*, H.

**BRYOLOGICAL EXCURSION TO QUEEN MARY'S DUBB, RIPON,
 V.C. 64, September 17th, 1960**

F. E. BRANSON

It was pouring with rain when five members arrived at the area to be investigated, but fortunately after about half an hour the rain stopped and the sun came out, making a very pleasant day.

I first took the party to see *Camptothecium nitens* which occurs in small quantity on both sides of a sluggish stream on the Ripon side of the Dubb. This is one of the rare mosses of Yorkshire. There also occurs with it *Climacium dendroides*, but not in a very dendroid form, the branches being rather widely spaced on the stem and straggling. The commonest moss in the boggy ground on this side of the Dubb is undoubtedly *Cratoneuron commutatum* with its golden-yellow tint and *Bryum pseudotriquetrum* also occurs in fair quantity. *Leskea polycarpa* and *Leptodictyum*

riparium were also gathered. Later in the afternoon we looked at the calcareous ground between the Dubb and the army bridge over the River Ure. This is a good place for *Barbula* spp. *Barbula fallax* is the most plentiful, and we also gathered *B. unguiculata*, *B. vinealis* and *B. convoluta*. I did not notice any *B. hornschurchiana* here as I had on a previous occasion.

A list of species noted is given below:

Fissidens taxifolius Hedw., *c.fr.*
Ceratodon purpureus (Hedw.) Brid.
Dicranoweissia cirrata (Hedw.) Lind.
Dicranum scoparium Hedw. var. *paludosum* Schp.
Tortula subulata Hedw., *c.fr.*
Barbula convoluta Hedw.
B. unguiculata Hedw., *c.fr.*
B. fallax Hedw., *c.fr.*
B. vinealis Brid.
Grimmia apocarpa Hedw.
Funaria hygrometrica Hedw., *c.fr.*
Pohlia delicatula (Hedw.) Grout
Bryum pseudotriquetrum (Hedw.) Schwaegr.
B. argenteum Hedw., *c.fr.*
B. capillare Hedw.
Mnium longirostrum Brid.
M. undulatum Hedw.
M. punctatum Hedw.
Climacium dendroides (Hedw.) Web. & Mohr
Leskea polycarpa Hedw., *c.fr.*
Thuidium tamariscinum (Hedw.) B. & S.
Cratoneuron filicinum (Hedw.) Roth
C. commutatum (Hedw.) Roth
Leptodictyum riparium (Hedw.) Warnst., *c.fr.*
Amblystegium serpens (Hedw.) B. & S.
Acrocladium cuspidatum (Hedw.) Lindb.
Camptothecium nitens (Hedw.) Schp.
Brachythecium rutabulum (Hedw.) B. & S.
Eurhynchium confertum (Dicks.) Milde
Pseudoscleropodium purum (Hedw.) Fleisch.
Rhytidiadelphus squarrosus (Hedw.) Warnst.

Marchantia polymorpha L.
Pellia fabroniana Raddi
Plagiochila asplenoides (L.) Dum. var. *major* Nees
Lophocolea bidentata (L.) Dum.

Transactions of the Natural History Society of Northumberland, Durham and Newcastle-on-Tyne. (1) Ornithological Report for 1959, by F. G. Grey, and (2) Farne Islands Papers, by Grace Hickling and J. C. Coulson. 5/- each from the Hancock Museum.

Much matter of interest to Yorkshiremen, including details of ringed birds and recoveries, is shown in each. Initials of observers are not given, but 'wherever necessary full details of identification have been considered by this Committee' (of the Ornithological Section) 'which is responsible for the validity of the records published.' Nevertheless, further information about such species as Dowitcher, Great Snipe, and Little Bunting is desirable. Size is not always diagnostic of Little Bunting, and its plumage out of the breeding season can also be indistinguishable from Reed Bunting's in the field. Format is excellent, aided by whole-page reproductions of a drawing of a Waxwing (James Alder), and of a photograph of an Arctic Tern (D. A. Quine); but some space saved in that direction could no doubt have been used to add information which would have increased ornithological values. *Farne Islands Papers* contain a 'Report on the Grey Seal', mainly in 1959, in 18 pages of very interesting matter, as well as 16 ornithological pages relative to the birds of the Farne Islands.

R.C.

British Cup Fungi and their Allies. An introduction to the Ascomycetes by R. W. G. Dennis. Pp. xxiv + 280 with 20 pages of black and white drawings and 40 colour plates. Ray Society, 1960. 80/-.

Most amateur mycologists confine their attention to the Basidiomycetes because books are available for their identification. The Ascomycetes attract far fewer students and for the opposite reason. No British systematic work covering this group of fungi has appeared for over sixty years and the existing foreign literature is, for most students, difficult of access. The present work therefore fills a long-standing gap and, better still, it fills it in a manner which is likely to make it the standard reference work on the subject for the next generation at least.

Nannfeldt's classification based on the unitunicate or bitunicate structure of the ascus, is adopted, with modifications in the Pezizales following Le Gal and in the Sphaeriales and Loculoascomycetes following Luttrell, Munk, and von Arx and Müller. Following this arrangement the British Ascomycetes comprise 16 orders, 60 families and 445 genera excluding the Laboulbeniales, the yeasts, *Gymnoascus* and a few others. Nannfeldt's classification cuts across the familiar and arbitrary division into Plectomycetes, Discomycetes and Pyrenomycetes and the shift in prime emphasis from the cleistocarpic, apothecial or perithecial form of fructification to the less easily observed structure of the contained asci has the effect of disrupting some genera and distributing their species to quite different families. Though the framework of this classification is more soundly based, generic boundaries often remain ill-defined and arbitrary, indeed Dr. Dennis goes so far as to say that 'The appropriate generic name can never be more than a matter of opinion'.

All the genera recorded in Britain, with the exception of those referred to above, are described and admirably illustrated, but at the species level the treatment is uneven. A single species of *Nectria*, two of *Diaporthe* and two of *Lasiosphaeria* are described, the student being referred to other works for further taxonomic detail. Yet two dozen species of *Dasyscyphus* are included though the author's revision of the British species is more easily obtainable than Winter's volume in Rabenhorst or Wehmeyer's monograph of *Diaporthe*. Often the number of species included is limited through lack of knowledge as to how many valid species occur in Britain; but it is tantalising to read that there are so many British species in a genus and find maybe half omitted. Like Olivers we crave for more.

There is a useful introduction covering structure and classification, taxonomy and nomenclature, and technique in the field and at home; and the kind of specialised collecting in which amateur mycologists may make worth-while contributions to knowledge is indicated. Dr. Dennis is outspoken on the subject of collecting. Serious study presupposes proper preservation of the material collected and he considers that 'lists of records that cannot be verified are mere waste paper'.

The book is produced in the manner we are accustomed to associate with Ray Society publications. The quality of reproduction of Dr. Dennis's skilfully executed paintings leaves nothing to be desired. They are a decoration to, as well as an indispensable part of, a book which will surely stimulate interest in these attractive and often beautiful fungi.

W.A.S.

A Poacher's Tale, by Fred J. Speakman and Alfred T. Curtis. Pp. 192. G. Bell & Sons, London, 1960. 18/-.

The junior author is the *ci-devant* poacher though he would have been referred to in my younger days as a 'moocher', an outdoor Autolycus to whom no trifle came amiss. Born in Essex, in the last decade of the old century, Curtis seems to have enjoyed as a boy all the privations which the Welfare State has unquestionably removed. With an instinctive and compelling love of the out-door life he seems early to have turned to a career of bird-catching, fishing and incidental poaching. His biography is much more a social document than one concerned with natural history but there are morsels of observation and deduction which merit consideration.

In a world in which the coursing of rabbits with whippets is illegal and yet the pursuit of bewildered hares by greyhounds provides a social event, it is easy to see how the ethics of bird-catching appear only to be a device for another piece of class legislation whose evasion comprises a social victory.

The senior author is to be congratulated inasmuch as his intervention is quite undiscernible.

A.H.

The New Poacher's Handbook, by Ian Niall. Pp. 156 with illustrations in text. Heinemann, London, 1960. 16/-.

This is a revised edition of the *Poacher's Handbook* of ten years ago and like its predecessor it derives its appeal from a vicarious titillation of those instincts which lie dormant in many to combine the activities of Nimrod and Robin Hood.

There are many passages which suggest that the author's experience is just as vicarious. Such phrases as 'Once I went fishing in a river, playing for a trout with a dry fly or some such lure', and 'We had brought a can of maggots, flies, worms and picked minnows' would make any angler raise an eyebrow. The kindest thing to say of the illustrations is that they are undistinguished.

A.H.

Practical Microscopy, by C. L. Duddington. Pp. x + 238, with frontispiece, 3 plates and 81 text figures. Pitman & Sons, London. 1961 30/-.

This is not by a long way the only book written as an introduction to the microscope, but it is certainly one of the best. The author is a biologist and he writes with the needs of the biological student particularly in mind, although the amateur wishing to embark on microscopy will also find the book relevant to his requirements. The contents justify the title, for it is indeed the *practical* aspects of microscopy which are emphasised throughout this book. In this lies its great merit. Microscopical theory is restricted to that minimum essential for proper understanding of the use of the instrument, and the bulk of the book is concerned with how to use a microscope, although advice is given on the selection of an instrument for particular purposes.

The second smaller part of the book is concerned with the preparation of various biological materials for microscopical examination, and formulae of some standard fixatives and stains are given as an appendix. The experienced worker would not expect to find himself in agreement with the author on all points of procedure since techniques are very much subject to personal idiosyncrasy, but most workers would regard Dr. Duddington's paraffin schedule as unnecessarily cautious and elaborate. This is, however, the only serious point of criticism raised here in relation to what is an excellent book—one which may be thoroughly recommended to the novice in microscopy, and which is furthermore cordially welcomed as fulfilling a real need.

J.D.L.

Physiology of Plants, by P. Font Quer. Translated from the Spanish text by D. H. R. Newton. Pp. 128, with 4 plates and 33 text figures. Arrow Science Series No. 6. Arrow Books Ltd., London. 5/-.

This is a companion volume to *The Anatomy of Plants*, reviewed in the last issue of *The Naturalist* (p. 144, 1960). The author interprets physiology very broadly, two of the seven chapters being concerned with genetics. We are told in the publishers' cover note that 'There is unusually fine treatment of the principles of heredity and genetics', but crossing-over has no place in this book, and the accounts of meiosis and mitosis are inaccurate. With regard to physiology, its biochemical aspects receive most inadequate treatment. For instance, enzymes merit one paragraph, and the only organic compounds mentioned in connection with photosynthesis and respiration are glucose and starch. The definition of respiration is frankly unacceptable. In short, this book cannot be recommended to any reader seriously interested in the subject.

J.D.L.

Field with Geese, by Lyn Irvine. Pp. 152 with 9 pages of photographs. Hamish Hamilton. 16/-.

This unusual book is devoted entirely to the habits of the domestic goose, as observed and recorded over a period of fifteen years. The author is a keen and sympathetic observer and interprets her observations with considerable insight. Compared with its wild ancestors the domestic goose is relieved of many of life's complexities—the great migrations, the daily flights from roosting to feeding grounds and the outwitting of many natural enemies, including man. As these complex movements no longer make their varied demands on the mental processes and domestication commenced many thousands of years ago, one wonders how much mental capacity has been lost.

This book is of considerable, though perhaps limited interest, to all students of bird behaviour.

E.W.T.

This Fishing or Angling Arts and Artifices, by L. A. Parker. Pp. xvi + 176. Cleaver-Hume Press Ltd., London. First published 1948, second edition 1960. 18/-.

This is a readable and well-illustrated book of considerable interest to all fishermen. Though primarily about coarse fishing, and mainly concerning the Hampshire Avon, it contains much valuable information that could be applied equally well to other rivers, especially of the faster flowing kind. The approach is mainly scientific and technical, but the descriptions are clear and concise, easily understood and never tedious.

The author stresses the need for a more scientific approach to the so-called art of angling, and shows by much careful observation that the water temperature may be a factor of great significance and that a variation of only a few degrees may make the difference between success and failure.

C.G.R.

Gone Fishing, by William Nathan. Pp. 212, with woodcuts by Kenneth Lindley. Heinemann, London, 1960. 18/-.

At least until the introduction of the aqualung, the natural history of fishes was compiled either from captive specimens or from the observations of those who made fish their prey either as food or in continuous support of the theory that human ingenuity is always transcendent over piscine avoidance mechanisms.

Just as men (oh yes, men, for women have in the main less need for such displacement activity) find perennial joy in fishing, preparing to fish and sometimes even clearing up behind them, so there is a continuing audience for books about fishing and the delights, and, above all, the anticipations, of going fishing. The author of this one is no purist and devotes his attentions to all kinds of fish, coarse, game and sea, even to the extent of setting night-lines on the beach. But, as usual, his fishes are just so much prey, their weight has the same prestige value as the numbers on those cardboard fishes recovered in the magnetic table-game, and as sentient aquatic creatures modified to live in osmotic inequilibrium remain as mysterious as ever.

All the same, it is written with a good deal more ability than is brought to many of its fellows and either by recollection or anecdote allows us to share all his hopes and excitements, his failures and his quiet joys without ourselves getting in the least wet, muddy or out of temper.

E.H.

Note.—I have, with dignity and grace, entirely overlooked a chapter entitled 'Women and Fishing'.

Observation and Experiments in Natural History, by Alan Dale. Pp. 154, with 8 photographs and 33 text diagrams. Heinemann. 12/6.

This is the last of a number of first rate books by Mr. Alan Dale. It is excellent of its kind, providing a real stimulus for an interested young person (or even an older one) to go out into the field and to discover for himself, in a scientific and exciting way. He suggests numerous, varied and practical experiments, needing little equipment, and yet based on sound principles, leading to valid results which are not spoiled by being anticipated. It is very well illustrated with instructive diagrams and photographs and it would be an admirable book for a school library.

M.S.H.

Two Little Savages, by Ernest Thompson Seton. Pp. 416, with over 200 drawings. Edmund Ward, London. 25/-.

This is a very attractively produced reprint of a classical book for youngsters which first appeared in 1903 and has since had millions of readers and has been translated into dozens of languages. It is the story of two boys camping in the wilds of Ontario, and is packed with information on woodland lore and the techniques of camping and woodcraft. The drawings illustrate such diverse topics as Canadian plants and animals, how to construct a teepee, shoot with a bow and arrow, build a dam or stuff an owl. In short, a book with a timeless appeal to boys who love the outdoor life and which owes its excellence to the fact that it is based on the real life experiences of the author.

B.A.K.

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The NATURALIST

A QUARTERLY JOURNAL

PRINCIPALLY FOR THE NORTH OF ENGLAND

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

with the assistance as referees in special departments of

Ralph Chislett, F.R.P.S., M.B.O.U.

Mrs. A. Hazelwood.

W. D. Hincks, D.Sc., F.R.E.S.

Mrs. Elsie M. Morehouse.

W. H. Pearsall, D.Sc., F.R.S., F.L.S.

E. W. Taylor, C.B.E., D.Sc., F.R.S.

H. C. Versey, D.Sc., F.G.S.

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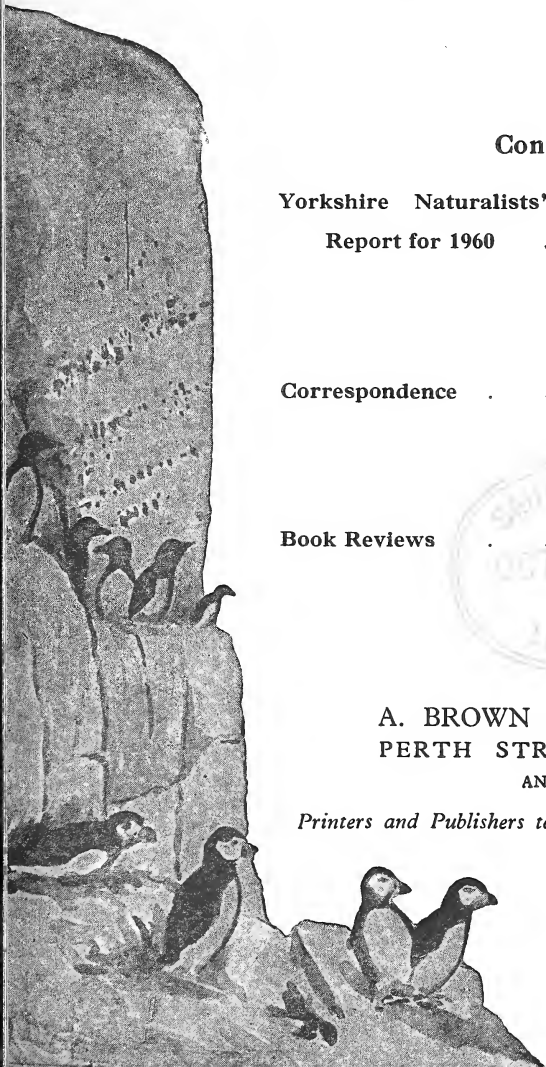
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CENTENARY DINNER, 1st DECEMBER, 1961

Members are reminded that the Centenary Dinner will be held at University House, Leeds, on Friday, December 1st, 1961. Our Patron, H.R.H. The Princess Royal, has graciously consented to attend.

Tickets for members, associate members and friends will be available at a cost of £1 each from the Dinner Secretary (Mr. M. M. Sayer, 10 The Gardens, Heath Road, Halifax) after September 1st. Dinner jackets or lounge suits may be worn.

Mr. Sayer would like to hear as soon as possible from any members requiring hospitality and from members and friends living in or near Leeds who could offer hospitality for the night of Friday, December 1st.

Secretaries of affiliated societies are asked to bring this information about the Centenary Dinner to the notice of their members.

YORKSHIRE NATURALISTS' UNION AND BRITISH TRUST FOR ORNITHOLOGY

A **Ringers' Conference** will be held at Cober Hill Guest House, Cloughton, Scarborough, during the week-end, Friday, 10th to Sunday, 12th November, 1961.

The Conference is intended primarily for members who are already ringers, but others who contemplate applying for ringing permits may find it useful to attend.

Details and bookings through the Secretary of the Ornithological Section of the Y.N.U., R. F. Dickens, Ridgfield, Glasshoughton Hill, Castleford, Yorks. (stamped addressed envelope, please).

THE CLEVELAND NATURALISTS' FIELD CLUB

This autumn we are again arranging to show a bird film. The film is entitled 'Reserved for Birds' and is produced by The Royal Society for the Protection of Birds.

This full length colour film is the latest of the famous R.S.P.B. films and tells of life throughout the year in the Minsmere Bird Reserve, an area of 1,500 acres of woods, heathland, farmland, shore and marsh on the Suffolk coast about two miles south of Dunwich, and five miles north of Aldeburgh.

The film will be shown in the Middlesbrough Little Theatre on Monday, October 2nd, at 7-30 p.m. Tickets will be 2/6 each, and we can make block bookings if required. There are good parking facilities at the Theatre. Applications for tickets should be made to B. N. Tinkler, 19 Newham Crescent, Marton-in-Cleveland, Middlesbrough.

NOTICE.

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:

The Entomologists' Monthly Magazine.

British Birds.

Bird Notes.

Bird Study.

Essex Naturalist.

The London Naturalist.

Irish Naturalists' Journal.

Transactions of the Lincolnshire Naturalists' Union.

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**YORKSHIRE NATURALISTS' UNION
ORNITHOLOGICAL SECTION, 1960**

Chairman: RALPH CHISLETT, M.B.O.U., F.R.P.S., F.C.A.

Hon Secretary: R. F. DICKENS, Ridgefield, Glasshaughton Hill, Castleford.

Recorders:

V.C. 61—East Riding: H. O. Bunce, 37 Auckland Avenue, Hull.
 V.C. 62—North Riding—*East*: A. J. Wallis, 13 Raincliffe Avenue, Scarborough.
 V.C. 63—West Riding—*South*: J. Cudworth, 17a Prospect Road, Ossett.
 V.C. 64—West Riding—*West*: A. F. G. Walker, 14 St. Helen's Road, Harrogate.
 V.C. 65—North Riding—*West*: R. Chislett, Brookside, Masham, Nr. Ripon.
 Spurn Bird Observatory: *Hon. Secretary*: G. H. Ainsworth, 144 Gillshill Road, Hull.

Report for 1960 (Compiled by A. J. Wallis)

The late appearance of this report will be a matter of great regret to many, not least to those who have the responsibility of its production. This lateness does emphasise as nothing else could do, the tremendous debt of gratitude that is due, from all in the Y.N.U., and the Ornithological Section in particular, to Ralph Chislett for the way in which for so many years he has collated the records and written the report with such unflinching regularity in time for the April issue of *The Naturalist*. This task has become more than he has felt capable of continuing single handed, and this year the work has been shared by the whole of the Recorders, all of whom, except Ralph Chislett, are in active occupations during the daytime. This has brought about inevitable delays, delays which have been accentuated by a too optimistic outlook by one person, and a failure fully to appreciate the work involved. The lesson has been learnt, and arrangements will be put in hand so that in 1962 the report will not be so long in making its appearance. All that has happened this year, has, as has already been mentioned, brought into its correct prominence the remarkable achievement of Ralph Chislett in presenting this report with such speed and accuracy for all the years that he has been its Editor. Our sincere thanks are due to him.

The March and October meetings held, as usual, in Leeds were both well attended, and a very large audience gathered in York for a meeting in November arranged in conjunction with the York Naturalists. Papers were given by four members, and a film at the Island of Foula and its bird life was shown. The section was represented at all the outdoor meetings of the Union.

Snow falls, with rain patches, fell twice during January, and there was a very cold spell from February 11th to 24th. A state of drought was reached by early July as the result of little or no rain from April. The rainfall in late July and after was high, and reservoirs previously at a low level gradually filled again.

The Spurn Report records unusual and even new birds for the Observatory and for the County, and the Classified List illustrates in its report the remarkable movement of some of the waders through the County, and the heavy passage of migrants over the memorable weekend of September 17th and 18th.

THE SPURN BIRD OBSERVATORY
(G.H.A. and R.C.)

Visitors to the Observatory during the year exceeded 350, excluding day visitors, some of whom came as parties of students from schools and colleges, and from natural history societies. Some of those who slept in Kilnsea did not sign our Visitors' Book and are also not included. The use of part of the bungalow has enabled more beds to be provided. Included among our visitors have been officials of the B.T.O., ornithologists from Sweden and the Netherlands, and from many parts of Britain.

We like to think that people come not only to enjoy the opportunities for watching birds, but also to help with the general work of the observatory, which may be epitomised as the study of bird migration. Even holders of ringing permits can do this, not only by use of the traps and by ringing the birds caught, but also by systematic watching and helping to record events in the books. The logs, over the years, show some unevenness, between periods well covered and less well covered;

RINGINGS OF THE SPURN BIRD OBSERVATORY

	Ringed in 1960	Total to 31/12/60		Ringed in 1960	Total to 31/12/60
Slavonian Grebe		1	<i>Brought forward</i>	339	2089
Storm Petrel		1	Bearded Tit		6
Cory's Shearwater	1	1	Tree-Creeper		3
Fulmar		1	Wren	67	387
Gannet	1	1	Mistle-Thrush	2	7
Shag		1	Fieldfare	18	63
Mallard	1	2	Song-Thrush	262	1066
Scaup		1	Redwing	134	404
Long-tailed Duck		1	Ring-Ousel	3	17
Common Scoter		1	Blackbird	500	4378
Sheld-duck		2	Wheatear	10	172
Sparrow-Hawk	2	23	Stonechat	4	41
Merlin		2	Whinchat	15	233
Kestrel	1	21	Redstart	97	864
Red-legged Partridge	1	29	Black Redstart	6	50
Partridge	3	10	Nightingale		7
Pheasant	2	4	Bluthroat	2	16
Corncrake		1	Robin	681	2113
Water-Rail	1	11	Grasshopper-Warbler	2	5
Moorhen		13	Reed-Warbler		13
Oystercatcher		4	Sedge-Warbler	20	192
Lapwing		11	Icterine Warbler		9
Ringed Plover	14	125	Blackcap	58	164
Golden Plover	1	1	Barred Warbler	2	19
Turnstone	6	9	Garden-Warbler	50	319
Snipe	1	5	Whitethroat	184	1615
Jack Snipe		1	Lesser Whitethroat	6	79
Woodcock	1	7	Willow-Warbler	145	1791
Green Sandpiper	1	2	Greenish Warbler	2	3
Wood Sandpiper	4	5	Chiffchaff	59	168
Common Sandpiper	2	2	Wood-Warbler		15
Redshank	2	18	Yellow-breasted Warbler	2	7
Greenshank	1	1	Pallas's Warbler	1	1
Knot		2	Goldcrest	113	688
Little Stint	3	3	Firecrest	1	1
Dunlin	101	197	Spotted Flycatcher	26	181
Curlew Sandpiper		2	Pied Flycatcher	43	744
Ruff	1	1	Red-breasted Flycatcher	5	26
Common Gull		6	Hedge-Sparrow	198	969
Little Tern		77	Meadow-Pipit	27	910
Razorbill		2	Richards' Pipit		1
Little Auk		1	Rock-Pipit		6
Guillemot		9	Tree-Pipit	1	29
Puffin		2	Pied Wagtail	1	3
Wood-Pigeon	1	4	White Wagtail		1
Turtle Dove	4	6	Yellow Wagtail	1	8
Collared Dove	1	1	Waxwing		1
Cuckoo	10	120	Great Grey Shrike		7
Barn Owl	2	2	Woodchat Shrike		1
Little Owl	1	6	Red-backed Shrike	1	11
Tawny Owl		1	Starling	161	1271
Long-eared Owl		5	Hawfinch		1
Short-eared Owl		1	Greenfinch	1174	3899
Swift		3	Goldfinch	2	38
Hoopoe		1	Siskin	7	21
Great-Spotted Woodpecker		4	Linnet	672	3866
Wryneck	2	32	Redpoll, Lesser	1	11
Short-toed Lark		1	Redpoll, Mealy	2	11
Skylark	46	268	Bullfinch		2
Shore-Lark	4	4	Scarlet Grosbeak	1	2
Swallow	34	394	Crossbill		6
House-Martin		2	Chaffinch	438	2675
Sand-Martin		36	Brambling	55	739
Carriion Crow		3	Yellow Hammer	19	123
Rook		6	Corn-Bunting		28
Jackdaw	2	12	Red-headed Bunting		1
Magpie	2	22	Ortolan Bunting		1
Jay		1	Reed-Bunting	78	751
Great-Tit	29	129	Lapland Bunting	2	3
Blue-Tit	39	327	Snow-Bunting	183	1958
Coal-Tit		61	House-Sparrow	1658	5455
Willow-Tit	1	4	Tree-Sparrow	187	268
Long-tailed Tit	10	13			
<i>Carried forward</i>	339	2089	<i>Total</i>	7728	41033

between periods of much and of little movement; and variations too with the activities of those present. For a long time we have felt that try as we would to keep the peninsula covered, with adequate daily reportage in the log, we were unlikely to succeed without a whole-time warden. The Yorkshire Naturalists' Trust Ltd. made this possible, as an experiment. The Trust shares the expense (and the services) of the warden, has furnished his rooms, has helped us financially with trap building, and promises to provide new lavatories.

An ornithological warden from March 1st, 1960, has avoided blank days (128 in 1959), has improved the logs and the systematic recording, has helped to increase the number of birds ringed, and has enabled various small matters such as minor repairs, better ordering of rings, etc., to be attended to as the need arose, to the advantage of us all. For all work to be done satisfactorily that is desirable would require a whole team of wardens; and it has been possible to have that for many periods, short and long, as the result of sustained co-operation by so many of our colleagues and visitors. We thank those who have sometimes sacrificed their holiday convenience to help with the observatory work. A number of names rush to the mind, but to mention any would be invidious. We hope such practical help will be continued.

More birds were ringed in 1960 than in any previous year. The increase over 1959 (1,871) consisted largely of Robins (468), Greenfinch (282), Linnet (476), House-Sparrow (605) and Tree-Sparrow (147). Dunlins ringed at 101 exceeded any other year. There were other smaller increases, but Goldcrests, Bramblings and Snow-Buntings were substantially fewer.

Birds have been recovered in countries of Western Europe, and in many parts of Britain, as the Table of Recoveries shows. New species ringed were Golden Plover, Little Stint, Common Sandpiper, Greenshank, Collared Dove, Barn Owl, Shore-Lark, Firecrest, and Pallas's Warbler (new as a species to Yorkshire). Rarer birds that were not new included Grasshopper, Greenish and Yellow-browed Warblers, and Scarlet Grosbeak.

BIRDS OF 1960 RINGED IN PREVIOUS YEARS
Ringed

Retrapped, 1960

	1959	1958	1957	1956	1955	1954
2 Blue-Tit	—	2	—	—	—	—
8 Skylark	2	4	1	—	1	—
3 Song-Thrush	—	2	1	—	—	—
1 Blackbird	1	—	—	—	—	—
1 Whitethroat	6	—	2	—	1	—
23 Hedge-Sparrow	19	4	—	—	—	—
5 Starling	1	—	4	—	—	—
53 Greenfinch	27	21	1	1	2	1
30 Linnet	14	12	3	1	—	—
8 Chaffinch	6	2	—	—	—	—
12 Reed-Bunting	7	2	1	2	—	—
25 Snow-Bunting	17	7	—	1	—	—
1 Lapland Bunting	1	—	—	—	—	—
98 House-Sparrow	35	15	15	15	12	6
—	—	—	—	—	—	—
278	136	71	28	20	16	7
—	—	—	—	—	—	—

Retrapped birds sometimes reveal the unexpected! We are told to record the sex of the birds we ring, which is a good thing to do if we are sure of it. The above table includes many birds that were ringed as juveniles in immature plumage, when sexing is not easy. Some sexed as female showed full male plumage when retrapped, months or even years later: *verbum satis sapienti*.

Passage of migrants fluctuates from year to year. Swifts were again at their maximum in July—the 5th of 1960, the 18th of 1959. Peaks for Swallows came on September 10th (c. 4,100), for Meadow-Pipits on September 11th and 19th (c. 8,200), and more Robins came in autumn than in any year since 1951, when the 'rush' was more concentrated.

So far as space allows, details of all species will be found in the 'Classified List', alongside events elsewhere in Yorkshire. Ringed birds recovered are shown separately.

RECOVERIES OF RINGED BIRDS

RINGED			RECOVERED	
* Ringed in Yorkshire			—	Recovered abroad
|| " " "			—	" in Yorkshire
¶ " " "			—	" in British Isles (except Yorkshire).
‡ " " British Isles (except Yorkshire)			—	" in Yorkshire
† " " abroad			—	" " "
RINGED			RECOVERED	
CORMORANT.				
‡ Pull.	10- 7-59	Farne Islands		24- 3-60 Whitby.
SHAG.				
‡	22- 7-59	Farne Islands	Dead	c. 20-2-60 Spurn
‡ Pull.	27- 7-60	Farne Islands	"	29-10-60 Hornsea
HERON.				
‡ Pull.	8- 6-58	Elmore, nr. Gloucester	Dying	17- 7-60 Darrington (130 miles NNE.)
‡ Pull.	7- 5-60	Denver, Downham Market, Norfolk		12-10-60 Hampsthwaite, nr. Harrogate. (125 miles NW.).
CANADA GOOSE.				
|| Juv.	8- 7-58	Ripley	Dead	25- 3-60 Studley Royal (5 miles N.).
|| Ad.	8- 7-58	"	Shot	3- 4-60 Otley (11 miles SSW.).
MUTE SWAN.				
‡ 1st. S.	31- 5-60	Cambridge	Recaptured	6- 9-60 Hornsea Mere (120 miles N.).
¶	3- 9-60	Hornsea Mere	"	6-10-60 Cambridge.
MERLIN.				
|| F.G.	20- 4-58	Cherry Cobb Sands	Dead	21-12-59 Withernsea.
KESTREL.				
* Juv.	15- 8-58	Great Hatfield, Hornsea.		1- 2-60 Falemprise (Namur), Belgium. (50°10'N., 4°25'E.).
¶ Pull.	28- 6-59	Sedbergh		4-11-59 Vicarstown, Co. Leix, S.W. Eire
¶ Pull.	28- 6-59	"		1- 2-60 Knowle, Solihull, Birmingham
* Pull.	28- 6-59	"		15- 2-60 Sauvignac (Charente), France
		(Last two from same brood).		
Pull.	21- 6-59	Fairburn	Dead	10 -1-60 Brigsley, Lincs.
LAPWING.				
¶ Pull.	14- 6-54	Ilkley	Dead	28-12-60 Abbeyleix, Ireland.
|| Pull.	24- 5-58	Ingbirchworth	"	7- 5-60 Dunford Bridge (5 miles WSW.).
COMMON SNIPE.				
|| Juv.	21- 8-60	Gouthwaite	Shot	12-12-60 Bowes (30 miles NNW.).
DUNLIN.				
* F.G.	9- 9-59	Cherry Cobb Sands		c. 27-7-60 Aboard trawler between Ostend and Grimsby.
†	28- 9-59	Revtangen, Norway.	Trapped	11- 9-60 Cherry Cobb Sands.
† F.G.	15- 9-60	" "	"	3-10-60 Spurn.
* F.G.	7-10-60	Spurn.	"	25-12-60 Gironde Estuary, France (45°30'N., 1°0'W.).
LESSER BLACK-BACKED GULL.				
‡ Pull.	31- 8-58	Farne Islands.	Dead	31- 5-60 Fly Flatts Reservoir.
‡ Pull.	1- 9-59	Isle of May.	"	10-12-60 Ardsley Reservoir (175 miles SSE.).
Pull.	26- 6-60	Roeburndale		19 -8-60 Vila do Condé, Portugal.
COMMON GULL				
† Juv.	28- 6-55	Lenkenhafener, Germany (54°27'N., 11°6'E.).	Dead	1-12-60 Hollym.

RECOVERIES OF RINGED BIRDS—*continued*

RINGED

RECOVERED

BLACK-HEADED GULL.

|| Pull.	23- 6-56	Wensleydale
¶ Pull.	23- 6-56	„
|| Pull.	14- 6-58	Wensleydale
|| Pull.	6- 7-58	Addingham, nr. Ilkley
†	10- 7-59	Schleswig-Holstein
Pull.		Nr. Askrigg
†		Bird with a Moscow Ring.

ARCTIC TERN.

† Juv.	25- 6-60	Puhtu, Estonia 58°34'N., 23°34'E.).
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CUCKOO

¶ Pull.	7- 7-60	Totley, Sheffield
* Juv.	6- 8-60	Spurn

SWIFT.

F.G.	20- 5-59	Harrogate
* F.G.	28- 6-59	Ilkley

SWALLOW.

* Pull.	21- 7-59	Mickletown
Pull.	16- 7-60	Seamer, nr. Scarborough.
Pull.	29- 7-60	Hathersage

HOUSE MARTIN.

F.G.	10- 5-58	Harrogate
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SAND MARTIN.

Juv.	13- 8-58	Masham
F.G.	7- 6-59	Otley
Juv.	9- 8-59	„
Juv.	9- 8-59	„
F.G.	2- 7-60	Ilkley
|| F.G.	4- 7-60	Tockwith
|| F.G.	8- 7-60	Knaresborough S.F.
|| Juv.	14- 8-60	Otley
|| Juv.	14- 8-60	„

Nine Fairburn recoveries have been held back

CARRION CROW.

Pull.	9- 6-59	Menwith Hill, Darley
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JACKDAW.

* F.G.	3- 4-60	Spurn
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GREAT TIT.

F.G.	9-11-54	Harrogate
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BLUE-TIT.

	27- 9-58	Spurn
	17- 1-58	„

COAL-TIT.

	3-12-55	Shipley
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	25- 6-60	Fairburn (50 miles SE.).
	16- 8-60	Gainsborough, Lincs. (75 miles SE.).
	-- 4-60	Pateley Bridge, (15 miles S.).
	-- 4-60	Pateley Bridge (11 miles NE.).
Dead	16- 2-60	Nr. Hull.
	5- 3-60	Dentdale.
Dying	1- 5-60	Scaling Dam.
Dead	9- 8-60	Spurn.
Dead	2- 8-60	Wyverstone, nr. Stowmarket, Suffolk. (c. 130 miles SE.).
	19- 8-60	Anna Paulowna (Noord Holland) Netherlands.
Trapped	27- 6-60	Knaresborough.
	21- 5-60	At sea 200 miles WSW. of Lands End. Recovered and died.
	19-10-60	Cérizay (Deux Sèvres), France.
Trapped	2- 9-60	Fairburn Ings.
	„ 24- 9-60	„ „
Trapped	20- 5-60	Knaresborough.
	13- 8-60	Mickley (3 miles SE.).
	21- 5-60	Ilkley
	2- 7-60	„
	2- 7-60	„
Trapped	30- 7-60	Gouthwaite (13 miles N.).
	„ 14- 8-60	Poole, Otley (15 miles WSW.).
	„ 31- 8-60	Fairburn Ings (20 miles SSE.).
	„ 22- 8-60	„ „
	„ 31- 8-60	„ „
	21- 2-60	Dallow Gill, Kirkby Malzeard, (8 miles N.).
	15- 4-60	De Koog, Texel, Frisian Islands, Holland.
Killed	30- 7-60	Harrogate (by cat.).
Trapped	13- 3-60	Spurn
	„ 19- 6-60	„
Trapped	27-12-60	Shipley.

RECOVERIES OF RINGED BIRDS—*continued*

RINGED		RECOVERED
LONG-TAILED TIT.		
|| F.G.	10-11-57	Hornby Park, nr. Bedale
		Trapped 22- 9-60 Hornby Park.
MISTLE-THRUSH.		
||	18- 2-59	Spurn
		2- 3-60 Headingley, Leeds.
SONG-THRUSH.		
¶	2- 8-57	Masham
		7- 1-60 Co. Clare, Ireland.
¶	6-12-58	Rodley S.F.
		5- 7-60 Colne, Lancs. (20 miles W.).
¶	1- 3-59	Spurn
		3- 5-60 Ingoldmells, nr. Skegness.
¶ Pull.	3- 5-58	Wentworth
		Dead 29- 3-60 Bakestone Moor, nr. Clowne, Derbyshire (15 miles SSE.).
|| F.G.	2- 9-59	Knaresborough
		Exhausted 3- 1-60 East Ardsley, nr. Wakefield (20 miles S.).
*	4-10-59	Spurn
		20-11-60 Oksbøl, Ribe, Jutland, Denmark.
BLACKBIRD.		
¶	7-11-54	Spurn
		25- 1-60 Skibbereen, Co. Cork, Ireland.
||	20- 7-55	Masham
		21- 1-60 Masham.
¶ ♀	31-10-56	Spurn
		31- 1-60 Buxton, Derbyshire.
¶ Ist. W. ♀	14-12-57	Ossett Spa S.F.
		19- 2-60 Glenties, Co. Donegal, Ireland.
¶ ♀	18-10-58	Spurn
		15- 1-60 Cullen, nr. Mallow, Co. Cork.
* Juv.	30-10-58	"
		25- 4-60 Orse (Kopparberg), Sweden.
* ♀	1-11-58	"
		17- 8-60 Fryksande, nr. Torsby (Varmland) Sweden.
*	27-11-58	"
		-- 9-60 Off Mellernd, Lake Vanern (Dals- land) Sweden. Only leg and ring found.
* F.G.	31- 1-59	Sutton-on-Hull
		Dead 28- 3-60 St. Mellby, Lidköping, Sweden. (58°30'N., 13°10'E.).
¶ Ad.	1- 3-59	Sutton-on-Hull
		Dead 5- 3-60 Port Clarence, Billingham, Co. Durham.
¶ Ad. ♂	24- 3-59	Spurn
		14- 2-60 Castleisland (Kerry), Ireland.
¶ Pull.	31- 5-59	Masham
		Dead 2- 8-60 Ellastrone, Staffordshire.
*	30-10-59	Spurn
		10-10-60 Barstad, nr. Sogndal (Rogaland), Norway.
¶ Ist. W. ♂	1-11-59	Flamborough
		c. 22- 2-60 Toome Bridge, Co. Antrim, Ire- land.
¶ ♀	21-11-59	Spurn
		29- 2-60 Stoney Stanton, nr. Hinckley, Leicester.
* Ist. W. ♂	15- 1-60	"
		24- 5-60 Nr. Sanderum, Odense (Fyn), Denmark.
Ad. ♀	28- 2-59	Gouthwaite
		5- 5-60 Norway (58°36'N., 7°51'E.).
Ad. ♂	23- 1-58	Harrogate
		25- 1.60 Conisborough. (35m. SSE.).
Juv. ♀	15- 6-59	Knaresborough
		24- 7-60 Market Bosworth, Warwickshire.
REDSTART.		
¶ ♂	5- 5-60	Spurn
		30- 8-60 Aberfoyle, Perthshire.
* Ist W. ♂	12- 9-60	"
		1-11-60 Nr. Almedinilla, Priego de Córdoba, Spain.
ROBIN.		
*	4- 4-58	Spurn
		20- 1-60 Golega (Ribatejo) Portugal.
LESSER WHITETHROAT.		
¶	8- 5-57	Spurn
		Trapped 23- 5-59 Cambridge.

RECOVERIES OF RINGED BIRDS—continued

RINGED

RECOVERED

CHIFFCHAFF.

|| 21- 5-60 Spurn

Trapped 28- 9-60 Spurn, on return passage.

GOLDCREST.

* 5-10-59 Spurn

19- 4-60 Rantum, Isle of Sylt, Germany.

MEADOW-PIBIT.

|| F.G. 1-12-57 Knaresborough S.F.

Trapped 14-11-59 Ilkley (16 miles WSW.).

* F.G. 29- 8-59 Gouthwaite

26- 2-60 St. Vivien, Médoc Region
(Gironde), France
(45°26'N., 1°02'W.).

* 1st W. 8- 9-59 ,,

24- 1-60 Carguefou, nr. Nantes (Loire
Atlantique) France.
(47°18'N., 1°29'W.).

* F.G. 3- 4-60 Ilkley

Dead 20-10-60 Anglet (Basses-Pyrénées) France.

PIED WAGTAIL.

* Pull. 24- 5-59 Wath-on-Dearne

Dead 1- 1-60 Nr. Tocha, Beira Litoral, Portu-
gal (40°19'N., 8°45'W.).

STARLING.

|| 5-11-53 Spurn

2- 3-60 Markington, nr. Harrogate.

* 17- 2-55 Thornaby-on-Tees

c. 15- 6-56 Tammentaka, Nr. Lieto, (Turku
Ja Pari), Finland (60°30'N.,
22°27'E.). Details first received
in 1960.

* 10- 3-57 Ossett Spa S.F.

25- 6-60 Odense, Fyn, Denmark.

* 18- 1-58 Octon (Wolds).

12- 9-59 Dorfe Raasiku, Estonia.

|| ♀ 25- 1-58 Knaresborough

3- 2-60 Burscough, Lancashire (62 miles
WSW.).

|| ♂ 8- 2-58 Bradford

15- 1-60 Goole, (35 miles E.).

|| 25- 3-58 Scawthorpe

Dead 7- 3-60 Stockton-on-Tees, Durham
(72 miles N.).

|| 3-10-58 Spurn

-- 1-60 Blaxton, Doncaster.

* 24-10-58 ,,

2- 8-60 Barth (Mecklenberg) Germany.

† F.G. 24-10-58 Wassenaar, nr. The Hague,
Holland.

Trapped 22- 2-60 Knaresborough S.F.

|| -- 12-58 Norton, Sheffield

Dead 4- 4-60 Malin Bridge, Sheffield.

* 9- 1-59 Masham

28- 4-60 Drammen (Buskerud), Norway.
(59°45'N., 10°15'E.).

* ♀ 11- 1-59 Knaresborough

9- 9-60 Borggard, nr. Finspang, Sweden.
(58°42'N., 15°45'E.).

* ♀ 11- 1-59 ,,

10-11-60 Adinkerke, West Flanders,
Belgium (51°04'N., 2°36'E.).

|| F.G. 11- 1-59 Otley

10- 1-60 Great Harwood, Lancashire.

* ♂ 16- 1-59 Harrogate

23- 4-60 Leer, Ostfriesland, Germany.

|| ♀ 17- 1-59 Knaresborough

9- 5-60 Leeds (13 miles SSW.).

* F.G. 8- 2-59 Ilkley

19- 4-60 Marrum (Friesland), Holland.

* 25- 4-59 Spurn

5-10-59 Middelkerke (West Flanders),
Belgium.

|| Pull. 12- 5-59 Gouthwaite

1- 3-60 Dungiven, Londonderry, Ireland
(205 miles WNW.).

† 18- 9-59 Aflandshage, Amager, nr.
Copenhagen, Denmark
(55°33'N., 12°36'E.).

5- 1-60 Fryston, Nr. Castleford.

|| 23- 9-59 Spurn

8- 5-60 Maltby, nr. Doncaster.

|| 5-10-59 ,,

10- 3-60 Rathanny, nr. Tralee, Kerry,
Ireland.

|| 15-10-59 ,,

8- 2-60 Penn, Wolverhampton.

RECOVERIES OF RINGED BIRDS—continued

RINGED		RECOVERED	
STARLING—continued			
*	8-11-59	Swinton, S. Yorks.	28- 8-60 Horneland, Fyn, Denmark. (55°05'N., 10°10'E.).
*	15-11-59	Hackenthorpe, Sheffield	Trapped 15- 4-60 Signilskär, nr. Eckerö, Åland Islands, Finland. (60°12'N., 19°22'E.).
¶ 1st W. ♂	18-11-59	Harrogate	16- 3-60 Great Harwood, Lancashire.
‡	21-11-59	North Belfast, Ireland	Trapped 1- 5-60 Swinton, (200 miles ESE.).
* 1st W. ♂	1-12-59	Knaresborough	14- 4-60 Nortorf (Schleswig-Holstein), Germany (57°52'N., 14°09'E.).
* F.G.	6-12-59	Ilkley	19- 2-60 Newry, Co. Down.
¶	3- 1-60	Swinton, S. Yorks.	26- 2-60 East Keal, Spilsby, Lincs. (60 miles ESE.).
*	3- 1-60	" "	27- 3-60 Hohenwestedt, nr. Jevenstedt, (Schleswig-Holstein), Germany. (50°15'N., 9°40'E.).
*	10- 1-60	Willerby, Hull	Trapped 28- 2-60 Willerby, Hull, and Dead 7- 7-60 Sveir, nr. Haugesund, Rogaland, Norway.
* ♀	18- 2-60	Knaresborough	19- 3-60 Bankeryd, Leer, Jonkoping, Sweden (57°52'N. 14°09'E.).
* ♂	19- 2-60	Bewerley, Pateley Bridge	25- 6-60 Pushkin, Leningrad, U.S.S.R. (59°43'N., 30°25'E.).
¶ Juv.	5- 6-60	Knaresborough	10- 8-60 Morecambe (53 miles W.).
|| Juv.	12- 6-60	" "	9- 8-60 Otley (12 miles SW.).
F.G.	13-12-59	Ilkley	22- 7-60 U.S.S.R. (56°20'N., 28°55'E.).
GREENFINCH.			
|| ♂	13- 1-59	Spurn	14- 3-60 Nr. Thorne, Yorkshire.
|| Pull.	8- 7-59	Ossett	15- 1-60 Gillamoor, Kirkbymoorside.
||	26- 8-59	Masham	31- 3-60 Thornton-le-Street, nr. Thirsk.
||	13- 9-59	Woodhouse Mill, Sheffield	Trapped 11- 9-60 Where ringed.
||	19- 9-59	" " "	22- 5-60 " " "
||	19- 9-59	" " "	11- 9-60 " " "
||	15-10-59	Spurn	19- 4-60 Welwick, E. Riding.
* ⊕	6-11-59	" "	29- 1-60 Simonsberg, nr. Ulvesbüll, (Schleswig-Holstein), Germany.
* Ad.	14- 2-60	Nr. Leeds	31-10-60 Denmark (57°13'N., 10°11'E.).
¶ ⊕ ♂	6-12-59	Spurn	22- 1-60 Oldham, Lincs.
¶ ⊕	19-12-59	" "	24- 7-60 Nr. Brigg, Lincs.
|| ⊕	28-12-59	" "	4- 5-60 Kirkella, nr. Hull.
|| ⊕ ⊕	29-12-59	" "	25- 4-60 Nr. Spalding, Lincs.
|| ⊕	29-12-59	" "	1- 5-60 Hull.
|| ⊕	1- 1-60	" "	7-5-60 Metheringham, Lincs.
|| ⊕ ⊕	2- 1-60	" "	10- 4-60 Pickering, Yorkshire.
|| ⊕	3- 1-60	" "	25- 4-60 Middlesbrough.
|| ⊕	6- 1-60	" "	28- 6-60 Ulceby, Lincs.
|| ⊕	14- 1-60	" "	25- 3-60 Hull.
¶ ⊕ ⊕	17- 1-60	" "	23- 3-60 Blyborough, nr. Gainsborough. Lincs.
|| ⊕	17- 1-60	" "	27- 3-60 Burstwick, nr. Hedon, Hull.
|| ⊕	18- 1-60	" "	3- 5-60 Cottingham, nr. Hull.
|| ⊕	24- 1-60	" "	10- 5-60 " " "
|| ⊕ ⊕	1- 3-60	Knaresborough	16- 6-60 Toolston, Tadcaster (11 miles SE.).
¶ ⊕	28- 3-60	Spurn	12- 6-60 Brinkhill, nr. Alford, Lincs.
LINNET			
* Pull.	26- 5-57	" "	13- 1-60 Villenave D'Ornon, nr. Bordeaux, France.

RECOVERIES OF RINGED BIRDS—*continued*

RINGED		RECOVERED
LINNET—<i>continued</i>		
* ♀	10- 4-59 "	30- 4-60 Sestao, (Vizcaya), Spain.
* ♂	20- 4-60 "	18-10-60 Onesse, nr. Commensacq (Landes) France, (44°12'N., 0°52'W.).
* ♂	27- 9-60 "	4-12-60 Zaragoza, Spain, (41°30'N., 0°54'W.).
CHAFFINCH.		
¶ ♂	30-10-58 Spurn	11- 4-60 Boston, Lines.
* ♀	6-10-59 "	31-10-60 Heligoland, Germany.
* ♂	8-11-59 Gouthwaite	13-11-60 Degubol, nr. Lenst., Jutland, Denmark (56°02'N., 8°24'E.).
¶	30- 1-60 Ossett Spa S.F.	23- 6-60 Morpeth, Northumberland.
¶ ♀	27- 3-60 Spurn	22-11-60 Chediston, Halesworth, Suffolk.
* ♀	2- 4-60 "	14- 4-60 Schiermonnikoog, Frisian Islands, Holland.
† ♂	20- 7-60 West Finland	Trapped 25-10-60 Spurn.
BRAMBLING.		
†	18- 2-58 Merksplas, Antwerp	14- 1-60 Spurn.
* F.G.	14-10-59 Spurn	16- 1-60 Bidart (Basses-Pyrénées) France.
|| F.G.	17-10-59 "	13- 1-60 Summerbridge, nr. Pateley Bridge.
REED-BUNTING.		
|| ♀	16- 1-60 Spurn	18- 4-60 Nr. Hornsea.
SNOW-BUNTING.		
¶ 1st W. ♂	30-12-59 Spurn	14- 3-60 Tankerness, Mainland, Orkney.
|| ♂	21- 2-60 "	16- 3-60 Holmpton.
HOUSE-SPARROW.		
|| F.G.	25- 1-59 Hornsea Mere	12- 4-60 Barmston, Yorkshire.
|| ♀	19-11-59 Knaresborough	9- 6-60 Tollerton, Yorkshire (10 miles ENE.).
||	9-10-60 Spurn	19-10-60 Rimswell, Withernsea.
|| 1st W.	21-10-60 "	24-11-60 Aldbrough, nr. Hornsea.
TREE-SPARROW.		
||	3-12-55 Knaresborough	Trapped 29- 4-57 and 15- 1-60. Where ringed.

CLASSIFIED LIST

(B.O.U. CHECK LIST (1952) ORDER. HANDBOOK NUMBERS BEHIND)

1. Black-throated Diver (378).—One at South Gare on January 23rd was probably of this species (M.P., P.H.) and single birds occurred along East Riding coast on March 20th, April 9th and 24th (G.R.B.). A bird at Spurn on April 1st was in summer plumage. Inland one at Tophill Low Reservoir on February 7th (R.H., A.V.); one in winter plumage at Swillington from April 28th-May 1st (R.P., *et al.*); one found dead at Lindholme Lake on December 27th had a rusty fishing hook in its mouth (A.E.P., *et al.*).

2. Great Northern Diver (376).—Single birds at Spurn on March 22nd and April 10th and at Teesmouth on January 10th and 12th, March 3rd and 27th were only spring records. In autumn first record is from Filey—one on November 5th (R.H.A.) was probably same bird as recorded on November 20th (M.N.) and December 24th (R.H.A.). One at Redcar on December 4th (D.R.S.). Inland one occurred at Eccup Reservoir on December 20th, and two stayed on Thrybergh Reservoir from December 4th to end of year and were seen by many including J. Cudworth.

4. Red-throated Diver (379).—Maxima recorded were 303 passing south at Spurn on March 2nd between 08.00 hours and 08.45 hours; *c.* 200 passing both north and south on March 5th; 240 passing north off Hornsea on February 6th

(G.R.B.). Smaller numbers were recorded off Hornsea, Flamborough, Filey and Redcar during every month of the spring and autumn, with many records during September, October and November. At Spurn autumn maximum was *c.* 80 on November 26th. Autumn proportion of three species at Spurn was similar to that of the spring. Inland two on Tophill Low Reservoir on February 7th (R.H., A.V.) helped identification of Black-throat seen at same time; single birds at Winterset Reservoir on January 23rd and on April 2nd and 3rd (J.S.A., *et al.*).

5. Great Crested Grebe (370).—Reported from 33 waters and breeding occurred on at least 12 of these, but again fluctuating water levels in May, June and July prevented successful nesting at most Reservoir nesting stations. On one Reservoir, a bird was shot off three eggs which were stolen (J.C.S.E.).

Swillington recorded a peak of 57 on May 21st; Hornsea 34 on May 8th (G.R.B.). Inland it appears that the species tended to stay longer into the autumn than is normal and the number seen during the winter months along the coasts was higher than is usual with a total of 74 recorded off Bridlington on January 6th (A.J.Ws.).

6. Red-necked Grebe (371).—Three Grebes that flew south at Spurn on April 10th were thought to be of this species (P.J.M.) and two on October 7th also flying south were recorded by C. Winn. A bird in summer plumage on the sea off Hornsea on May 1st (G.R.B.); one in Filey Bay which was seen from September 24th to the end of the year by R. H. Appleby and several other observers, and two in the Scarborough South Bay on the 6th November (M.N.), were the only other records.

7. Slavonian Grebe (373).—The Spurn log reports one on the sea on September 17th might have been black-necked, one on the Humber on October 9th was certainly Slavonian (C.W.). The only other records are one on Hornsea Mere, February 6th (G.R.B.) and one on January 3rd at Dam Flask (D.R.W., R.G.H.).

8. Black-necked Grebe (374).—Four records only. One at Hornsea Mere on January 10th (G.R.B.); one at Swillington on August 8th and 10th (M.D., K.D.); two on Scaling Dam on August 24th, one of which stayed until August 31st (D.G.B.) and one at Fairburn Ing on November 13th.

9. Little Grebe (375).—Breeding records were much as usual for the county but Spurn produced the only coastal records out of nesting seasons when birds occurred on a few days in spring, and regularly from August on the canal, dykes and lagoons. Autumn flocks were recorded at Micketown Flash with a maximum of 41 on August 11th (A.F.), and 32 on September 11th at Woodhouse Mill (R.G.H.).

12. Leach's Petrel (351).—Good views were had of one on the Humberside at Spurn on April 18th when its forked tail was noted, and later as it was harried by Herring Gulls (J.C., J.K.F.).

14. Storm Petrel (350).—One passed north at Spurn about 40 yards off shore on September 16th and its size and points noted (P.J.M., G.R.N.), and another passed north on September 26th. On November 3rd a bird was found on the main road at Sutton-in-Craven alive but exhausted. When released the following day it flew off eastwards quite strongly (E.G.), and a bird brought into the Scarborough Museum from a fishing boat on November 18th was also released the following day and flew out to sea quite strongly (G.S., A.J.W.).

16. Manx Shearwater (355).—At Spurn spring occurrences were very few; the peak day of autumn came on July 23rd with 68 passing northward between 04.30 and 08.00 hours (R.F.D., G.R.B.). Along the rest of the East Riding coastline varying numbers were recorded on 31 days between early April and late September with peaks of 20 and 21 on June 29th and 30th respectively (G.R.B.), while on July 21st A. J. Williams watched 87 feeding close in or passing north off Flamborough Head. On the North Riding coastline odd birds were seen during late July and August but further north at Redcar the species was only recorded on four dates between July 19th and September 16th.

20. Cory's Shearwater (362).—One was sent down to the Spurn Observatory on October 1st by the R.S.P.C.A. in Hull. It had come on to a ship some days earlier, the exact position of which was unknown and despite careful enquiries by B. S. Pashby further indications as to its origin could not be traced. From wing lengths (362 mm.), tarsus (57 mm.), bill (56 mm.)—16 mm. deep at nostrils and 11 mm. wide, it was considered to be North Atlantic and not Mediterranean; and from worn plumage in partial moult to be at least a year old. It was slightly oiled on the breast but eventually flew. Bracketed because its position when found is not known.]

21. Sooty Shearwater (363).—At Spurn the species was recorded on eight days from September 6th to October 15th with maximum of five on September 26th. Elsewhere on the coast was recorded one at Flamborough on August 7th (H.O.B.), three in Bridlington Bay on September 18th (S.M.), one at Hornsea on September 20th (G.R.B.) and one off Filey Brigg on October 1st (R.H.A.).

26. Fulmar (368).—With more sea watching it would seem that there is a more marked passage of Fulmars along the coast than might previously have been expected. At Spurn the species was recorded on a few days in spring and more regularly from May 28th with maximum of 22 on May 29th and June 11th. On April 24th about 150 passed north in 25 minutes off Filey Brigg (R.H.A.), and a peak of 39 off Hornsea were seen on the 29th (G.R.B.) with 23 the peak for June at the same station on June 12th (G.R.B.). In the autumn 47 were seen passing south at Spurn on August 30th where none occurred after September 20th. Fifteen passed south in one hour at Atwick on August 25th (L.S.), and 254 passed south off Filey Brigg on December 10th within two hours (R.H.A.). This last record may be part of a weather movement as the birds seem to be returning to the cliffs somewhat earlier each year. Again birds returned to Flamborough during November, when they were seen on the 27th by A. J. Williams, and at Scarborough, where Christmas Day has for some years been the recognised first day for their return, birds have visited the Castle Cliff during the earlier days in December for two or three years past.

27. Gannet (349).—The year 1960 was the most successful year to date on the nesting colony at Bempton. One old site was reoccupied and two new ones failed, yet eight nests were built, seven eggs laid and six young presumed reared (H.O.B.). The movement of the Gannets along the coast presents much the same picture as in other previous years. At Spurn, after a few birds seen from March 1st, spring maxima were 23 on April 16th and 19th and 32 on the 17th—almost all were adults. Farther north at Flamborough, 51, all adults excepting one, moved north on April 17th (P.J.S.), and 36 were seen from Filey Brigg on the same date (R.H.A.). Sixty-six passed north off Hornsea on June 12th (G.R.B.), and several moving north off Flamborough during early July. At Spurn, July 23rd was the date of the first big movement, when 372 passed north; 387 on August 12th were also moving northward and the species was very active from August 27th to 29th. A southerly movement was noted at Filey Brigg and Hornsea during August with a peak of 120 at Hornsea on August 28th (R.H.A., G.R.B.). The number passing Scarborough in a southerly direction during the autumn was normal but no records come from the Teesmouth area on the Yorkshire side although large numbers are recorded off the Durham coast at Hartlepool. As the species is recorded quite close inshore in Bridlington Bay and Filey Bay why should they pass so far offshore in the Teesmouth area on the Yorkshire side that they failed to be recorded by the watchers there. A juvenile was picked up inland near Huggate and flew strongly when released at Spurn on September 25th (G.B.).

28. Cormorant (346).—Again no news of the few Yorkshire breeding colonies is available. At Spurn some Cormorants and/or Shags were seen on most days but not always specifically identified though recorded as Cormorants most frequently. Twenty-five on April 9th (four definitely Cormorant) was maximum until after the breeding season. Forty-two on September 5th included 19 Cormorants and one Shag; 54 on October 29th included one Cormorant and 30 Shags. Cormorants continue to use the marker posts at Hornsea Mere as drying perches with a maximum of 18 on February 14th and 28th (G.R.B.). Inland a bird occurred on Leighton Reservoir on January 20th (P.Y.); at Lockwood Beck on April 3rd (M.A.); and one flew over Scaling Dam on April 27th (D.G.B.). A bird was seen at Thybergh Reservoir on October 9th (J.B.H., A.E.H.) and one at Blackmoorfoot Reservoir on December 27th (D.M., O.S.W.). At Gouthwaite Reservoir between January 2nd and April 15th, between one and six birds were frequently seen, both adults and immatures. On several occasions birds were seen to circle to very considerable heights and fly away but absences were only temporary. On April 4th a fresh arrival was an adult with a magnificent silver head. Odd birds at other neighbouring waters may well have come from Gouthwaite (E.G.). At Eccup Reservoir four immatures on March 5th, an adult on March 31st and four immatures on May 14th and at Menston one seen flying south on April 8th. See Ringing Appendix.

29. Shag (438).—No details of breeding at Flamborough and no large movements along the coast have been recorded. The species has been seen off Hornsea and Filey Brigg with only one record from Redcar, a single bird on March 24th

(D.R.S.). A maximum of ten together in Filey Bay were seen on December 24th (R.H.A.). See Ringing Appendix.

30. Heron (289).—At Hornsea Mere only 13 nests were located of which no more than five were certainly occupied (H.O.B.). At Healaugh heronry, 20 nests were found (W.B.). At four smaller heronries a total of 16 occupied nests averaged four per heronry while at a fifth colony eggshells were found on the ground beneath six nests (J.R.M.). At Hornsea Mere the maximum recorded was 40 in the air on May 29th and again on June 6th (G.R.B.), while the species was very numerous in the Blaxton area during July, August and September with maxima of 24 on August 3rd (C.J.B., D.K.) and 20 on September 11th (A.E.P., J.B.). The maximum at Wintersett was 12 on August 28th (J.S.A.).

Coastal records at Spurn occurred with single birds recorded on three days in March and on six days from April 1st to 10th (two on 1st), one or two appeared on many days from July—four on September 13th, six on October 12th—and that some, perhaps most, were immigrants is more than possible. The same must apply to single birds which came in from the sea at Atwick on August 28th and September 3rd and 23rd (G.R.B.); four which flew in from the sea and continued inland at Sewerby on September 19th (Miss J. Fairhurst); records of birds at Redcar on July 24th, August 16th and 23rd and October 17th (D.R.S.) and six flying west at South Gare on August 13th (D.G.B.). Five seen at Locker Tarn on March 24th with no heronry in the district were also probably migrants (G.E.A.). See Ringing Appendix.

38. Bittern (297).—A bird was flushed from a reed-filled dyke at Blaxton on January 24th (R.J.R.) and on August 31st near Swinton the keeper (R. Broomfield) who knows the bird well, surprised one at five yards and watched it for some five seconds before it flew heavily away. He described the bird as a bit smaller than a Heron with a shorter neck and long, straight bill. The plumage description given fits and the place was quite suitable (E.E.J.). One to two were seen in an East Riding locality between May 6th and August 1st, when one was picked up dying and was identified by A. Hazelwood as an immature (probably first summer) male in a very advanced stage of avian T.B. These birds were seen by many observers. Another juvenile was found dying on August 14th at Westwick Lock, near Bishop Monkton. It was very thin and died of starvation (Sergeant B. Downhill). A bird also occurred at Fairburn Ing on September 17th.

40. White Stork (285).—A bird which occurred on the farm of Mrs. A. Sleightholme at Hawsker and was reported in the *Whitby Gazette* was described as a White Stork. P. J. Stead, who saw Mrs. Sleightholme and other local farmers, is clear from the descriptions given that the identification was correct. The bird was not seen by any local Ornithologist, although it stayed for about two weeks during late April.

42. Spoonbill (287).—One occurred in the lagoon area near Easington on May 14th, 1959 (J.S.A., A.R.H.), and was omitted inadvertently from last year's report. One flew south-west over the narrow neck at Spurn at 08.20 hours (B.S.T.) on May 15th and at 08.50 hours was disturbed resting on the chalk bank shore at high tide (P.J.M.). One flew south offshore near the lagoons at Spurn on June 9th at 15.20 hours (J.B.), two adults flew south offshore at 15.05 hours (B.S.T.) on August 30th (A.F., R.L.W.).

45. Mallard (317).—Once again only a broad picture of the numbers of Mallard wintering in the area can be given and there has been no evidence of other than an average year for the species during the breeding season. In the early months of the year, numbers at Hornsea Mere fell steadily from c. 3,600 on January 3rd to c. 30 by April 9th (G.R.B.) but had risen again to c. 500 on June 11th and from then onwards increased steadily to the 3,000 mark by end of December (G.R.B.). In the spring the numbers on the Lower Derwent floods fluctuated with as few as 50 recorded on January 10th, but 1,000 on February 21st and again on March 13th. In the autumn at Bubwith 350 had arrived by October 16th and this number increased to a maximum of almost 3,000 by December 4th, falling to just over 1,000 by the end of the month (M.R.S., A.F.G.W.). At Leighton Reservoir the maximum of c. 1,000 on November 13th had grown from a figure of 400 on September 18th (E.E.J.). On the upper Humber, between Brough and Trentmouth about 1,000 birds on September 4th had dropped to about 600 on December 21st (S.M.) and it is possible that the Lower Derwent floods had taken some of these birds. At Fairburn Ing the maximum of 700 on January 17th dropped in the second half of March to below 100 in April and May. There was an increase in early June to 250 on the 4th, and then

the numbers fell again until 200 on July 31st. Autumn peaks were 400 on October 23rd, 700 on December 11th and 600 on December 27th. At Eccup Reservoir the same pattern was observed, with maxima of 760 on January 3rd and *c.* 800 on 10th and *c.* 860 on December 18th. This build up was in 1960 perhaps slower than usual, probably because foot-and-mouth disease restrictions at Harewood cut down disturbance and kept the birds within the Park which otherwise would have moved to Eccup. At Spurn January 9th (720) gave the maximum for the year of birds on the Humberside, after 230 on March 13th, numbers fell away to 66 on April 3rd, and were only few afterwards. Immigrants began to come in early October and *c.* 220 had been reached by November 5th, with the autumn maximum of about 350 on December 14th and *c.* 480 on the 29th. On the other hand, at the Tees Estuary, only 150 were present on February 13th (P.J.S.) and a maximum for March of 527 on 13th (R.M., J.H.), with no autumn counts recorded. Other counts from smaller inland waters have been received, for example, in the West Riding the maxima were reached at Thrybergh Reservoir, Blackmoorfoot Reservoir and Winterset Reservoir in February, while at Blaxton the highest count was on December 27th, with *c.* 240 birds present. At Scaling Dam the maximum count occurred in December also and on December 25th an almost black female bird was present (M.A.). Another leucistic bird was seen with six others of normal plumage at Duncombe Park, Helmsley, on November 27th (C.D.M.).

46. Teal (319).—Counts of this species were in many places higher than in 1959. Again referring to the various waters where large concentrations occur the pattern is much the same in each case. At Hornsea Mere, G. R. Bennett counted *c.* 350 on January 3rd rising to *c.* 550 on March 5th, then dropping to two only on May 29th. By September the numbers were again increasing and reached a maximum of *c.* 1,580 on December 4th. On the Lower Derwent Floods, *c.* 50 were present at Bubwith Ings on January 10th (H.O.B.) but *c.* 1,050 were counted there on February 21st (H.O.B.). The number fluctuated slightly between 800 and 1,000 throughout February and March and in the autumn the build up began with about 70 on October 16th to 1,600 as a maximum on November 27th (M.R.S., A.F.G.W.). On the Upper Humber, were *c.* 200 between Brough and Faxfleet on April 6th and *c.* 750 in the same area on September 4th (S.M.). At Fairburn Ing, 300 on February 28th was the spring maximum. Numbers increased again in late August, 300 on the 28th, rising to 400 in late September and 500 by year end. At Gouthwaite, January maximum of 140 on the 2nd and a summer peak of 160 on July 16th. High water levels kept the numbers down to about 20 in August and September, but the number rose to between 120 and 150 through December. At Hornby Park, Teal were average in number during the year (G.R.P.), with a maximum of 180 to 190 on November 30th, but at Leighton Reservoir six was the maximum on November 13th (E.E.J.). At Spurn, present mainly in the lagoon area on many days, spring maximum 48 on March 21st, and in autumn 63 passing south on August 27th, *c.* 100 on September 7th, and 95 on the 16th. After October 3rd (*c.* 25) numbers were few and occurrences more occasional.

Green-winged Teal (320).—A drake occurred in a party of 13 Teal at Eccup Reservoir on February 19th (G.R.N.).

47. Garganey (322).—Spring occurrences are far more numerous than autumn records at Spurn. From March 21st to April 2nd up to four occurred including two drakes while only single birds occurred in the autumn on September 5th and 6th. At Hornsea a male and female were present on April 30th (G.R.B.), a male on May 10th (B.S.P.) and two on July 17th (G.R.B.) with a single female on September 23rd (G.R.B.). A pair was seen at Misson on April 15th (R.J.R.), a male at Fittingley on April 17th (A.E.P., J.B.), a pair at Armthorpe on April 18th (R.J.R.) and a pair at Worsborough Reservoir on April 27th (T.K., T.M.C.). A male in eclipse was at Sprotborough Flash on August 22nd (R.J.R.), while at Swillington Ing a pair was seen on April 30th but only a female on the 25th (L.M.). At Fairburn Ing two on April 2nd were the earliest, rising to six by the 15th, nine on July 17th as a maximum; a single bird on October 2nd was the last. Five were seen at Aughton Ings on March 20th (R.H.). A pair possibly bred in one West Riding locality (R.J.R.).

49. Gadwall (318).—The increasing frequencies of Gadwalls mentioned last year has again continued, making it impossible to include all the records sent in. At Hornsea Mere during the first three months G. R. Bennett recorded 56 on January 3rd, 60 on January 23rd, 18 on February 6th and 15 on March 5th. A male and female were present through April into May with two pairs on May 14th

(G.R.N.); five were seen regularly through June to August with the numbers dropping to one to six from September to the year end (G.R.B.). At Fairburn Ing the species was seen in all months, generally one to six birds, but increasing to nine to 14 in the last ten days of August and rising to a maximum of 27 on September 13th. At Swillington Park, seen in April, May, August and October with maximum of *c.* 15 (L.M., *et al.*). A male and female at Nostell on February 28th (J.C.) were probably the same pair that were seen at Winterset on March 13th (J.S.A., R.P.S.). Pairs were also recorded on three other waters in the West Riding during May and early June with four birds at Sandbeck on August 4th (C.J.B., *et al.*). At Scaling Dam three were present at the end of April and a male on May 1st was joined by a female on May 5th (D.G.B., *et al.*). On January 10th five at Leighton Reservoir (E.E.J.); a pair on the Lower Derwent Flats on March 20th (M.R.S., A.F.G.W.) and single birds at Eccup Reservoir on January 8th, February 7th and December 25th and 26th. Coastal records include a pair at Spurn on April 18th and two passing south on August 28th and again on October 18th. Two also flew north off Hornsea on March 27th (G.R.B., A.D.B.).

50. Wigeon (323).—That the Derwent Valley floods usually show large concentrations of this species preparatory to departure is again confirmed by the observations made there. During February and March various observers made counts ranging from *c.* 2,500 to *c.* 5,000 but by April 10th the number had dropped to about 50. At Spurn *c.* 300 in early January gradually dwindled to under 50 by March 2nd. On 25th the number jumped back to *c.* 150 but had become 10 by April 20th; and the last two were recorded on May 1st. At Hornsea the early months of the year showed counts of up to about 800 on February 20th (G.R.B.) although odd birds continued to be recorded there throughout May, June and July. Farther inland between 75 to 80 on February 14th were at Hornby Lake (G.R.P.) and 130 on January 1st was an unusually large number for Fairburn. Numbers were generally fairly high there rising to *c.* 150 on February 28th, falling to fewer than 20 after March 20th but with a fresh peak of *c.* 120 on April 2nd and 3rd. These had left by April 7th and except for a single bird on May 8th did not occur again until August 21st. At Scaling Dam the spring maximum occurred in January with 39 on January 31st and at Teesmouth a maximum of *c.* 100 in mid-March.

The autumn build-up also followed the usual pattern. Three appeared at Spurn on August 9th with the next two on 28th after which numbers increased and fluctuated with maxima of *c.* 150 on September 13th (mainly passing south) and flocks of up to 60 or more about the *spartina* with a sudden rise to *c.* 110 on December 26th. At Bubwith the autumn influx began with *c.* 30 on October 16th rising to *c.* 2,000 by mid-December (M.R.S., A.F.G.W.). At Hornsea the main increase came in early November and by December 26th *c.* 850 were present (G.R.B.). At Gouthwaite 12 had returned by September 17th increasing to 58 on October 16th but numbers failed to exceed 78 in rest of year, after a spring concentration slightly higher than this which remained remarkably constant in the first three months. Breeding was again proved in a Yorkshire tributary of the Tees (D.G.B.).

52. Pintail (325).—Coastal areas again provided the majority of records of this species, although the highest numbers were seen on the Lower Derwent Flats between Bubwith and Aughton. The spring numbers there fluctuated between 20 and 40 birds with maxima of 63 on February 7th (M.R.S., A.F.G.W.). In the autumn these totals were exceeded when the same observers recorded over 66 on December 4th. At Hornsea Mere, G. R. Bennett recorded the species in every month except August with a spring maximum of 18 on February 6th, an autumn maximum of 61 by December 26th. The species occurred at Cherry Cobb Sands in both spring and autumn (A.D.B.), while at Spurn a few appeared from March 21st (*c.* 12 on 28th) to April 5th. One was seen on August 7th and up to four on 15 days to December 3rd. One or in some cases two birds occurred at Winterset, Whitemoor, Blackmoorfoot Reservoirs and at Finningley and Blaxton as well as Leighton Reservoir and Scaling Dam. At Fairburn Ing occurred in small numbers in the first three months with a maximum of five on April 3rd. Odd single birds in latter part of April and May and one on May 15th was last of the spring, the only autumn record being one on December 27th. Small numbers also recorded at Gouthwaite and Eccup Reservoirs not exceeding four. Two males and a female with a large flock of Wigeon on floods in the Pickering area on February 3rd is an unusual record for this area (A.J.W.).

53. Shoveler (326).—Records have been received from 22 different waters and no doubt others could be included if every bird was reported. Generally the maxi-

imum numbers do not seem to have been as high as in 1959 although a higher total was recorded at Fairburn Ing where a maximum of 60 in January decreased to 12 in the latter half of the month. The peaks of 75 in February, 70 in March preceded 40 to 50 birds during the breeding season, a brood of seven was seen on June 16th and another of six on July 12th. The autumn maximum was 170 on September 11th. At Gouthwaite two pairs returned on April 3rd but breeding was not proved. At Eccup the bird was recorded in all months except May, July and August but did not exceed nine. The maximum at Hornsea was 52 on August 28th but the numbers seen there by G. R. Bennett fluctuated wildly through the year. He thought there were probably two pairs present through June. The V.C. 63 reservoirs had a maximum of 12 at Blackmoorfoot on December 30th (J.S.), otherwise numbers did not exceed six. The Lower Derwent floods were visited by maxima of 29 on March 20th and 12 in the autumn on December 11th (M.R.S., A.F.G.W.). At Spurn appeared on January 9th (seven), on March 28th (one) and up to nine on ten days from April 6th to 18th; and on one or two days in May and June. Thereafter a few occurred on many days—15 on September 11th being the maximum.

54. Red-crested Pochard (327).—A bird seen on a small pond in Barnsley from July 7th to 9th and again from 11th to 17th was probably a drake in eclipse as it had a red bill. There is always the possibility that it was an escape (P.B.W., C.E.B.). One at Fairburn Ing on July 29th was a drake in eclipse.

55. Scaup (331).—Only two birds occurred at Hornsea Mere in the spring from January 23rd to 27th (G.R.B.) but the same observer saw varying numbers there during September to December with a maximum of 12 on October 15th and again on November 13th. Odd numbers passed off Hornsea during July and August and single birds were seen at Filey Brigg during October (R.H.A.). At Redcar birds passed in February and March with six males and one female on March 2nd (D.R.S.). Thirteen were seen at Spurn on March 27th and included seven males, some remaining for two days; otherwise the species only appeared on four days up to July 22nd. A few on odd days in autumn with a maximum of 14 on November 5th and 16 on November 13th. Inland at Fairburn Ing single drakes were present on January 23rd, July 16th and October 2nd. Eccup Reservoir had a pair on January 2nd, single drakes on August 6th to 9th, August 31st, October 1st and a duck on October 26th. A single drake at Knotford Nook Gravel Pit was present from August 30th to September 8th (P.S.). A female was seen on Welton Water during March by several observers and a pair stayed at Worsborough Reservoir for a week during February (D.S., *et al.*). Scaling Dam had up to three males and a female during the early months of the year with three birds staying throughout the month of March and on into April (D.G.B., *et al.*). In the autumn odd birds occurred at Ogden Reservoir on August 9th (D.A.S.), Bretton Park on October 16th (E.G., J.E.D.), Whiteholme Reservoir on October 23rd (V.S.C.) and at Fly Flatts Reservoir on several dates during November and December (D.A.S., J.C.P.). On the Derwent floods only autumn records were made with four on October 23rd, nine on November 27th, one on December 4th, three on December 11th (M.R.S., A.F.G.W.). A single bird visited the Peasholm Park pleasure lake at Scarborough for one day on January 1st (M.H.N.).

56. Tufted Duck (330).—Hornsea Mere again recorded large numbers with a spring maxima of *c.* 370 on January 9th and an autumn maxima of *c.* 690 on November 27th with 10 to 12 males being present throughout the summer (G.R.B.). At Fairburn Ing where other large concentrations occur, 275 on January 1st and 2nd increased to 300 on 3rd, gradually decreasing in numbers but remaining at between 80 and 90 during the breeding season. A maximum of four broods totalling 21 ducklings was counted on July 23rd. From September numbers again increased to a peak of 268 on November 13th. The Lower Derwent floods attracted small numbers during March and larger numbers during November and December with maxima of *c.* 175 on November 27th and *c.* 150 on December 27th (M.R.S., A.F.G.W.). The species occurred at many other waters in the county both large and small with maximum numbers including 29 at Nostell Dam on February 28th (J.C.), 22 at Bretton Park on March 19th (A.N.S.), *c.* 40 at Woodhouse Mill in both spring and autumn (R.G.H.), 29 at Finningley on August 4th (A.E.P.), 25 at Southfields on October 28th (A.E.P.), 22 at Whiteholme Reservoir on November 18th (V.S.C.). The species nested successfully at Brotherton Ing, Swillington Ing, Gouthwaite Reservoir and at Sawley Dean where broods of three, nine and five were recorded (M.R.S.). The species also nested, possibly for the first time, at Scaling Dam where from a clutch

of seven, five apparently hatched successfully (M.A.). On Leighton Reservoir, 16 on December 12th was the only occasion when more than two were seen (R.C.).

57. Pochard (328).—Recorded from rather more localities than in 1959 and many of the larger concentrations were bigger than a year ago with over 500 at Hornsea during January, February and March and up to 700 in late November and early December (G.R.B.). The species was present at Hornsea throughout the year. At Fairburn Ing 130 at the beginning of the year increased to 220 on February 28th and 310 on March 20th. Between 60 and 80 were present throughout the breeding season rising to 120 on October 16th and 185 on November 13th falling again towards the year end. The species bred successfully and broods of three, three, two and one were seen on July 12th while at Brotherton Ings five broods were seen on July 5th with the largest being eight ducklings (R.F.D.). Gouthwaite had a maximum of 34 on August 13th (A.F.G.W.) and at Eccup 32 on November 8th was the largest so far recorded there. Scaling Dam recorded a maximum of 31 on February 6th (P.J.S.) and the species returned on July 23rd with a maximum of 11 by August 7th (D.G.B.). Worsborough Reservoir had a maximum of 138 on March 13th (A.A.) and 82 in the autumn on December 26th (T.M.C.). Maxima of 53, 28 and 30 in March were recorded for Walton Hall, Finningley and Woodhouse Mill respectively with 75 at Southfields Reservoir on November 9th. At Spurn only single birds were recorded on March 27th, June 25th and August 28th.

58. Ferruginous Duck (329).—A female or immature drake was first seen on Harewood Park Lake by A. H. B. Lee on February 7th and was still present up to April 23rd. This bird also occurred at Eccup on February 21st and March 27th and another bird at Eccup on May 1st and 2nd. One at Hornsea Mere on January 5th (G.R.N.).

60. Goldeneye (332).—Like the Pochard this species was recorded on many waters and in varying numbers, again with the largest concentrations occurring at Hornsea Mere where birds were seen in every month except June and August with spring maximum of 180 on February 28th and autumn maximum of 142 on November 13th (G.R.B.). At Fairburn Ing numbers fluctuated during the first four months of the year with 20 on October 30th, the first main influx of the autumn. Numbers at Gouthwaite and Glasshouses Dam did not exceed 18 in the first three months with an autumn total for both waters of 42 on December 18th. At Whiteholme Reservoir the spring maximum was 20 on January 5th and in November 24 included 10 males on November 6th but only eight males on November 12th (V.S.C.). Fifteen occurred on Top Hill Low Reservoir on February 7th (R.H., A.V.) and a maximum of 15 were counted at Scaling Dam on March 20th. Other largish flocks included 19 on January 17th at Eccup, 26 on March 20th at Harewood Park (C.G.B.), 26 on March 27th at Sawley Dean (M.R.S.) and 17 at Copgrove Lake on January 15th (C.W.). A few birds were recorded late into the spring including an adult drake at Harewood from May 1st to June 12th, a drake at Malham Tarn on June 18th (P.F.H.) and a brown head at Ogden Reservoir on June 26th (C.Wn.). On the coast seven were flying north-west at Redcar on October 17th (D.R.S.) and 12 was the maximum counted at Filey Brigg on October 23rd (R.H.A.) while at Spurn up to four were recorded on six days in March and April and up to seven on 13 days from October 14th. The Derwent floods attracted smaller numbers in the spring but maximum of 120 were seen at Bubwith on December 11th (M.R.S., A.F.G.W.).

61. Long-tailed Duck (334).—Except for seven seen south of Hornsea on November 10th (G.R.B.) and two which occurred at Spurn on October 30th, all other records are for single birds. The species occurred at Hornsea Mere on January 6th (A.D.B.) and on February 7th, 20th and 28th and December 4th and 26th (G.R.B.). At Bubwith on October 16th and 23rd, November 27th and December 4th (M.R.S., A.F.G.W.), Filey Brigg on November 5th (R.H.A.), at Scaling Dam on January 9th, February 7th and 26th with a bird staying throughout March until 20th (D.G.B., M.A.). At Gouthwaite Reservoir an adult drake was beginning to assume breeding dress on April 2nd (M.R.S., A.F.G.W.) and an adult drake occurred at Fairburn Ing from October 29th to November 13th. Odd birds were also recorded in the spring at Teesmouth, South Gare and Redcar. A bird was seen by A. J. Williams and others when it stayed on a small farm pond at Flamborough for six days from November 5th to 11th.

62. Velvet Scoter (340).—Except for one bird at Blackmoorfoot Reservoir on March 14th (C.D.) all other records are for coastal areas. At Redcar several birds were always present with the Common Scoter flock, numbers fluctuating but usually

about six with maximum of 11 on March 5th. The species was absent from May 8th to June 26th with two on July 11th and one on August 7th and 11th, only odd birds occurring during the autumn (D.R.S.). Between Filey Brigg and Hornsea varying numbers were recorded on 20 dates during the year with maxima of eight off Hornsea on July 16th (G.R.B.) and 11 at Filey Brigg on December 10th (R.H.A.). At Spurn single birds occurred on April 17th, May 1st and July 23rd—all days when Common Scoters were in some numbers. Was recorded more frequently from September 16th, always when Common Scoter were plentiful with maximum of five on October 15th.

64. Common Scoter (339).—Of frequent occurrence at Spurn from March 27th (15) through the spring and summer with maximum of *c.* 450 on July 9th when one flock of *c.* 150, after some circling around, headed westward at high level—at this time Scoters in flocks often occur on waters inland but A. F. G. Walker considers, with the disturbed late summer and autumn weather and the prevalence of low cloud and mist on Pennine Hills, that records of this species inland were remarkably few and the largest number he records are of five drakes and two ducks on July 24th at Gouthwaite Reservoir. Odd birds occurred on some ten other inland waters including one male and four females at Semerwater on March 5th (G.E.A.) and six on the Leighton Reservoir on March 6th (R.C.). At Spurn no very large rafts appeared, *c.* 400 on October 24th flying south in several parties constituted the autumnal maximum. From Redcar D. R. Seaward writes that the resident flock usually numbered 100-200 in the spring, the species being absent from early May to late June after which 30-50 were regularly present until August 9th when again numbers built up to about 200 on the sea off Redcar on October 30th.

67. Eider Duck (337).—Has again been recorded on many dates throughout the year along various parts of the Yorkshire coast, but no large flocks have been seen during 1960, 33 including 16 males passed off Hornsea on October 17th (G.R.B.). At Filey where the species has for several years been represented by fluctuating numbers throughout the winter months, the maximum was only five on October 29th (R.H.A.). Seven which included six adult males were off Easington on September 15th (W.A.B.) and at Redcar the largest number was seven including one adult male on January 23rd (D.R.S.). At Spurn single birds on January 17th, February 27th and March 28th were the only records of the spring. One was found dead and headless on the Humber shore on April 16th with a splint tied to a broken leg! The species reappeared with single records on September 6th and 9th, 12 on 25th that flew north and up to 16 on 12 days in October and November. Movement along that part of the coast took place both north and south. Fifteen on October 19th included seven adult and one immature male and seven dark birds and on November 13th five were males out of a flock of 11. On fresh water one occurred on the Lower Derwent Floods on December 4th (M.R.S., A.F.G.W.) and one on December 26th (L.S.) while the first bird to be recorded at Scaling Dam was seen on November 27th (D.G.B., M.A.).

69. Red-breasted Merganser (343).—The species again returned to a north-western water to nest and three clutches of six, seven and seven were located but many of the eggs were addled and the observers saw not more than eight chicks of which it is doubtful if any got away. Up to five birds—two drakes and three ducks were present (J.H.I.L., A.P., K.H.). At Eccup a redhead on January 10th and 23rd, three on January 16th, one on February 3rd and a pair on March 29th. At Fairburn Ings up to two in January and one to February 7th. A pair occurred on Gouthwaite on October 16th (A.F.G.W.) and a duck at Swillington Ing on November 13th (A.H.B.L.). A redhead at Winterset on April 2nd (J.S.A., *et al.*), a redhead at Southfields Reservoir on May 1st (R.J.R.) and a redhead at Horbury on May 25th (R.P.), a male at Blackmoorfoot Reservoir on November 26th (P.G.R.B.) and a second male at the same place on December 24th (C.D., D.M.) cover the records from the western part of the county. In the east birds were seen flying north-west at Redcar, two on April 14th, three on April 16th and four on October 15th (D.R.S.). Two were in Scarborough South Bay on October 7th (M.H.N.); at Filey was recorded on several dates with a maximum of seven on September 18th (R.H.A.) and three at Hornsea Mere from January 3rd to 23rd was the maximum for that water (G.R.B.). Two visited the Lower Derwent floods on November 27th (M.R.S., A.F.G.W.) and a male was seen on Welton Water on April 30th and May 1st (B.S.P., D.T.B.). At Spurn this species occurred on eight days from March to the end of May, on July 1st and on at least 12 days to November 9th.

70. Goosander (342).—Larger flocks have been recorded than a year ago where the species is commonest and odd birds have been seen on many waters throughout the county. At Hornsea the flock reached 108 on February 14th and was still at this figure on March 5th (G.R.B.). At Stocks Reservoir the maximum was 62 on January 31st which included 16 drakes, with 58 still present on March 6th including 21 drakes, and 60 at Eccup on March 3rd. Two redheads there on April 30th were the last of the spring (J.H.I.L., K.H.). In the autumn the numbers at Hornsea only reached 57 by December 26th (G.R.B.) and at Eccup the maximum was 33 on December 19th. Knotford Nook Gravel Pits, near Otley, attracted birds for the first time, except for one previous record of a pair, when up to 11 occurred in March (P.S.). Fairburn Ings had a maximum of 21 on February 14th and Scaling Dam where the species was present during January, February and March had three from March 5th to 23rd (D.G.B., M.A.). Five including one male, were at Semerwater on March 5th (G.E.A.) and six on Leighton Reservoir on the following day (R.C.). Ten other inland waters recorded similar small occurrences; and on the coast four were off Hornsea on October 16th and six on 18th (G.R.B.), one at Filey Brigg on October 22nd (R.H.A.), one at Spurn on May 22nd and October 19th with nine on October 11th (two males) passing up the coast (C.W.F.H.).

71. Smew (344).—Compared with 1959 this year has been more profitable for records of this species. From one to three occurred at Fairburn in January, February, March and three on April 21st with a drake on December 31st. Between February 6th and April 19th, from one to four redheads occurred at Harewood Park Lake (M.D., *et al.*) and probably the single redhead at Eccup on February 14th and 28th originated from here. A female at Coniston Cold Lake on February 27th (P.G.R.B.), two females on Ilton Reservoir on February 28th (P.Y.), one on Worsborough from January 31st to February 21st (D.S., *et al.*) and a female at Winterset on January 16th (J.S.A.) complete the records from the west half of the county. In the east females occurred at Hornsea Mere on February 14th, 20th and 28th, two on March 13th with one redhead December 26th (G.R.B.). One was on the Lower Derwent Floods on December 11th, 26th and 27th (M.R.S., A.F.G.W.) with the first record from Scaling Dam, a female seen from November 5th to 27th (M.A.).

73. Sheld-duck (315).—The Tees Estuary had the largest numbers ever recorded when counts of between 1,000 and 1,300 were made on January 23rd and 24th (D.G.B., J.H.). Nine hundred were still present on February 13th (P.J.S.) with *c.* 810 on March 13th dropping to *c.* 400 at end of month (R.M.). D. R. Seaward considered that small parties seen coasting north-west off Redcar during January, March and April were probably returning moult migrants, as on April 16th four which came off the sea flying high flew off directly westwards inland. The next largest concentrations to the Tees Estuary flocks occurred in the Lower Humber during July with *c.* 300 at Patrington Haven on July 12th and *c.* 100 there on July 27th (H.O.B.). In the upper Humber up to 360 were counted between Brough and Trent Falls on April 6th with 240 on June 16th and *c.* 260 on September 4th while only 12 could be found on December 21st (S.M.). Between Filey Brigg and Hornsea odd birds were seen during the early and late months of the year but more records have been made for Filey Brigg than for some years past. For example five were seen on September 19th (E.J.W.) and ten on November 12th (R.H.A.). At Spurn occurred almost daily except from mid-September to mid-October. The largest flocks came from March 20th to April 18th (maximum 72 on March 21st). Sixty-six on July 9th included 45 that gained height as they flew out to sea eastwards—six of them had taken off from the Humber to join the passing flock and a further 17 also flew east; and others on moult migration may have passed unnoticed. Numbers were considerable again from October 23rd to 30th and on November 12th and 13th, 25th and 26th. Inland occurrences like the Common Scoter were fewer than usual, despite the inclement weather in the late summer during normal migration time. At Fairburn Ings occurrences were six on March 12th, four on March 20th and two on May 4th. At Eccup a party of 17 was present on September 5th while at other waters the maximum reached was six at Blaxton on August 30th.

75. Grey Lag Goose (303).—Records specified as being of this species were a flock of 13 at South Gare on January 2nd (D.R.S.), an injured bird at Patrington Haven from April 28th to May 28th (H.O.B.), a party of eight calling over Hornsea Mere on June 6th (G.R.B.), 31 which flew low over the road at Ripley heading west on September 3rd (K.H.). About ten in a flock of *c.* 70 Grey Geese on Welwick Salting on November 20th (A.C., B.S.P.).

76. White-fronted Goose (304).—At Spurn identified as this species were eight on March 22nd and 23rd, six on November 5th and four on December 4th. A single bird seen with Canada Geese on Fewston Reservoir on January 10th (Batley and District N.H.S.), two on Lower Derwent Floods on March 12th (M.R.S., A.F.G.W.), ten in the same area on March 20th (R.H.) and a party of nine which flew over Hull on December 5th when the barring was clearly seen on the underparts of all birds (B.S.P.).

78. Pink-footed Goose (307).—In the Humber Refuge estimated counts in January and February fell from *c.* 1,000 at the beginning of the year to about 50 on March 22nd when observations ceased. In late September numbers began to return building up to an estimate of *c.* 20,000 on October 20th. However, H. O. Bunce feels that these figures are exaggerated as on November 12th he made a morning flight count of *c.* 5,340 from Broomfleet Island. The count was made under first-rate conditions and for that day the watcher recorded *c.* 10,000 birds. The numbers had fallen away to only about 50 by the year end. Flocks of varying numbers up to 100 or more were recorded flying over or near many other inland waters the last recorded being two at Spurn on April 16th where most geese are recorded as Grey Geese although most would be pink-footed. A single bird seen on many dates through the summer by many observers in the Humber Refuge was probably another case of a pricked bird.

80. Brent Goose (312/13).—Single birds seen off Hornsea on March 20th and April 17th (G.R.B.); one dark-bellied bird resting on the dunes at Redcar on April 4th (D.R.S.) was also seen near South Gare from April 13th to 16th (D.G.B., *et al.*); one at Flamborough on October 3rd (A.J.Ws.) and three at Filey Brigg on December 27th (R.S.); up to two birds occurred at Spurn on six days (January 29th, April 6th and 7th, October 15th and 29th and December 18th).

81. Barnacle Goose (311).—Two flew north on September 25th at Spurn (P.S.).

82. Canada Goose (314).—The species continues to prosper and nesting, with varying success, has been recorded from at least 11 waters. Reports also refer to largest numbers recorded so far, for example—150 on November 6th and 153 on December 11th at Wentworth Woodhouse (T.M.C.) and 330 plus at Ripley Park on November 13th were both records for those particular waters. Eighteen were released on East Park Lake, Hull, in June, all but three pinioned and at the year end only nine remained (B.S.P.). At Spurn a single bird settled in a field in the canal zone on April 12th and on September 4th at Leighton Reservoir E. E. Jackson watched one take off from the water to a height of five feet and then dive at a 45 degree angle to become completely submerged for some five seconds before resurfacing, a behaviour which does not seem to have been recorded previously. See Ringing Appendix.

84. Mute Swan (302).—At Fairburn Ings the monthly maxima were as follows: January, 45; February, 31; March, 15; April, 31; May, 80; June, 162; July, 216; August, 216; September, 100; October, 58; November, 60; December, 54. Similar patterns in the rise and fall of the size of flocks were recorded at Hornsea Mere and at Welton Water although the numbers involved were smaller, although the count of 100 in January falling to 25 in February at Hornsea would indicate a temporary influx during the first month of the year. At Swillington Park there were 47 on September 25th, 64 on October 16th, 64 on November 13th, falling to seven by December 26th (A.H.B.L.) and although the species was recorded from many other large and small waters, nowhere else were figures as high as those already mentioned. On the coast, two were seen at Flamborough on April 15th (H.O.B.); seven flying south at Filey Brigg on August 1st (R.H.A.); one adult off Skipsea on August 17th (J.R.G.). At Spurn one was about the canal zone until February; on February 13th there were two to remain until April. Five immatures frequented the Humberside near the 'Crown and Anchor' on May 10th and 11th, none appeared there after May 31st. See Ringing Appendix.

85. Whooper Swan (300).—Mainly small flocks were noted on at least 27 waters both in the spring and autumn but in most places the birds do not appear to have stayed for any great length of time on any particular reservoir or mere. The longest visits would seem to have been two adults at Bolton Ings on April 3rd, one of which remained throughout April, May and into early June (T.M.C., A.A.) and at Whitemoor Reservoir varying numbers that were recorded on five dates between October 16th and December 25th (E.G.). Flocks of ten and over occurred at Winterset Reservoir on February 6th when 12 flew over (J.S.A., D.S.); 25 including 11

immatures on the Lower Derwent floods on February 28th and 35 including 13 immatures in the same place on November 27th (M.R.S., A.F.G.W.). Sixteen, of which only two were immature, at Wath Ings on November 12th (T.M.C.); 20 of which seven were immature at Denaby Ings on November 13th (R.J.R.), had halved by November 20th (J.B.H.) and fallen to eight on December 10th (R.J.R.); at Fairburn Ings the spring maxima was 23 on January 9th and at the end of the year 12 during the latter half of December. At Glasshouses Dam a family party of two adults and two juveniles were present except for brief absences during January, February and March, and became so tame that they would take bread with two Mute Swans from 12 foot range. The species was only recorded twice at Spurn when three flew north on March 20th and two passed east over the Warren out to sea on October 6th.

86. Bewick's Swan (301).—Occurrences at the beginning of the year were fairly numerous making it impossible to record every single record but fewer birds appeared during the latter part of the year. On the Lower Derwent floods the four observers named recorded numbers fluctuating from 26 to 30 between February 21st and March 20th (H.O.B., M.R.S., A.F.G.W., R.H.). Five stayed at Patrington Haven from April 3rd to 23rd (A.C., *et al.*). At Fairburn Ings one was present on March 27th, five on April 2nd and 3rd and a single bird stayed throughout the summer months from April 29th to November 20th. At Gouthwaite three adults and five juveniles flew down the valley on January 23rd (A.F.G.W.). At Long Preston on February 6th four adults and nine immatures were seen on flooded fields with one adult and four immatures still present on March 5th (D.A.S., J.C.P.). At Scaling Dam three including two adults were present on March 17th, five being recorded two days later (P.J.S.). In the autumn numbers on Welton Water varied between 12 on November 5th (D.T.B.) to two on December 11th (T.J.). The flock on the Lower Derwent floods was 54 on December 11th and 46 on December 27th (M.R.S., A.F.G.W.). Fifteen birds including 10 adults at Fly Flatts Reservoir on December 31st had gone the following day (A.D.W., V.S.C.). At Swillington there were 17 including eight immatures on November 13th (A.H.B.L.). On November 9th a fine herd of between 50 and 60 flew south-west over Harrogate calling (A.F.G.W.). Five flew north-west low over the dunes at Redcar on October 26th (D.R.S.).

91. Buzzard (269).—Eight nests were found in the north-west and most produced young (J.R.H., H.W.B., Sedbergh S.S.). A bird was seen soaring over Haw Park on February 27th (D.S.). One was found dead at Roos on September 17th and was seen by J. Cudworth, the skin is now in Hull Museum. At Spurn one on August 9th was the only record. At Moor Edge west of Masham one was watched being mobbed by Rooks on October 21st (P.Y.). Single birds were recorded from eight other localities and Buzzard Sp. were seen in the autumn at Hornsea and over Hull. Near Pocklington up to five were present from the beginning of January to March 17th and two in the same area from September 23rd to the year end (C.N.). One circled near Langsett on April 19th (D.S., G.A.).

92. Rough-legged Buzzard (268).—Single different birds flew south on November 5th and 6th at Spurn. Dark carpal patches below, dark terminal bands to tails were noted; but only the second bird had a very dark lower breast. Good views were had by P. J. Mountford, G. R. Naylor and R. H. Bolton.

93. Sparrow-Hawk (277).—At Spurn the species occurs less frequently than formerly and three birds passing south on April 15th, and single birds on March 20th, 24th, April 19th and May 11th, were all of the spring, and one on September 15th of autumn. At Hornsea a male was seen on May 1st (G.R.B.); one at Esholt Hall on January 17th (L.M.); one at Ogdon Reservoir on April 11th (C.W.); one at Sutton-in-Craven on May 23rd and June 15th (E.G.). R. Chislett watched one at Langton Bridge on July 16th fly slowly to a tree a hundred yards distant and leisurely eat something. It was the only one he recorded during the year. A. F. G. Walker records that the species seems to get scarcer each year. He received records of single birds from seven localities including a pair in one place which were destroyed at the nest.

99. Marsh-Harrier (271).—A cream-crowned bird at Hornsea Mere on September 19th and 24th (G.R.B.) was the only record except single birds at Spurn recorded on May 7th (female), 14th (female) and 22nd (male).

100. Hen-Harrier (273).—Only three spring records, a male at Hornsea Mere on March 20th (G.R.B.); at Spurn April 5th and 20th; and a male on May 7th circling over the Dean Head Valley which might have been of this species (P.G.R.B.). A bird recorded from Sammy's Point at Spurn on September 24th could have been

this or the next species for date. Others at Spurn were seen on October 6th, November 3rd (ring-tail) and 25th. In early November D. G. Bell received an unmistakable description of one at Guisborough from a Forestry Commission Worker. A ring-tail was seen north of Wroot on December 27th (J.C., *et al.*); and M. Allison watched a female quarter over moor and farmland at Stanghow on December 15th, possibly the same bird being seen in the same place on December 29th.

102. Montagu's Harrier (272).—A bird seen by P. Young over Ilton Moor, Upper Nidderdale on June 12th, too far away for him to be sure of the species, could have been the same bird seen by A. G. F. Walker and D. Swindells on June 6th. They watched the bird for 15 minutes, at ranges down to one hundred yards and identified it as a female Montagu's. A female or juvenile flew down the Humberside at Spurn on August 1st. A bird at Hornsea Mere on October 15th could have been this or the previous species (A.D.B., G.R.B.), the same day that a ring-tailed harrier was seen at Fairburn Ings. E. W. Taylor received reports of two in one locality on July 31st seen by a reliable observer who considered them to be birds of the year, and two were also reported to him on September 8th from Stoneley Woods.

103. Osprey (284).—One flew south past the Narrow Neck at Spurn on April 3rd, following the beach at a height of *c.* 50 feet (J.C., G.R.B.). A. D. Buffey saw one taking a large fish from Sancton Lake on May 7th, and on September 17th at Gouthwaite one flew up the west side of the reservoir, perched in a plantation before continuing up the dale to the north-west, passing two observers within 20 yards (A.S., A.F.G.W.).

104. Hobby (261).—P. J. Mountford had a good view at Spurn of a small falcon with swift-like characteristics on June 18th, and from its brownish-grey upper parts and lack of conspicuous chestnut thighs it was thought to be a first summer bird.

105. Peregrine Falcon (259).—One nest was unsuccessful, another eventually showed three, possibly four, birds on the wing, and the observer is satisfied one, possibly two, were reared. A dead bird found by a gamekeeper at Brotton in March was seen by D. G. Bell; one was watched at Austwick on February 28th being mobbed by a pair of Ravens; one stayed at Eccup from end of March to mid-April; H. O. Bunce saw one at Patrington Haven on May 13th and two in the same place the following day; one at Redcar on September 12th (D.R.S.); occurred on four days in autumn at Spurn between September 19th and October 23rd.

107. Merlin (262).—A pair was watched in aerial display near Stanghow on February 28th (M.A.). The species bred on the moors near Masham, on July 20th one was seen to take prey in the air from another as in the Harrier's 'pass' (P.Y.). A pair bred near Pateley Bridge, rearing five young (M.R.S., *et al.*). Apart from records from other breeding areas, single or up to two birds were most recorded elsewhere. Single birds seen at Redcar on three days in spring, on September 1st, 3rd and 17th, and October 22nd (D.R.S.); at Spurn on January 31st, February 29th, May 14th, August 8th and 28th, September 18th and 25th, and up to two on ten days in October with one on November 18th; at Eccup Reservoir, February 27th, October 13th and early November; Ossett Spa S.F., January 17th (A.F., R.W.); Ogdan Reservoir, March 1st (D.A.S.); Fly Flatts Reservoir, April 19th (A.D.W.); Whiteholme Reservoir on September 23rd and November 12th (V.S.C.); Flamborough, October 15th (M.R.S., A.F.G.W.); Atwick, October 19th (G.R.B.) and Worsborough Reservoir, October 23rd (C.B., T.M.C.). See Ringing Appendix.

110. Kestrel (263).—Conflicting reports concerning the status of this species have been received with, for example, D. Swindells reporting unusually large numbers from August 9th in the Middlesmoor area of Upper Nidderdale, a maximum of six together on that date; and the species was also above normal numbers in the autumn elsewhere in Nidderdale, while R. J. Rhodes says there were few days in the Doncaster area without Kestrels being seen. On the other hand J. B. and A. E. Hague consider the bird appears to have decreased over previous years around Mexborough and it has been suggested that it might be worthwhile asking for all breeding records during May, June and July in 1962. The pair again bred on the Leeds Town Hall and young were seen on July 13th (S.J.W.). Birds were seen along the coast at Redcar in both the spring and autumn (D.R.S.) while farther south evidence of migration in the Filey Brigg and Flamborough area was only reported during the autumn. At Spurn the species was of daily occurrence with evidence of migration on July 25th (seven August 7th, five August 11th; and fewer on some days thence until October). See Ringing Appendix.

113. Black Grouse (513).—A. F. G. Walker reports that the species appears to be on the increase in the north-west of the county and other records come from Apedale when one male and two females were seen on March 24th and a single bird at Black Hambleton on February 28th (G.E.A.).

115. Red-legged Partridge (519).—At Birkham Wood, Knaresborough, on May 30th, J. R. Mather flushed a bird from a nest containing 10 Pheasant's eggs and 13 Red-legged Partridge eggs. A pair at Port Mulgrave on June 14th is another record received. At Spurn both Red-legged and Common Partridge occurred as usual but slightly less frequently and in smaller numbers than formerly. Double figures of the Red-legged were not recorded. Sixteen on October 5th and *c.* 20 on November 3rd applied to the Common Partridge and double figures do not appear again.

117. Quail (520).—Birds were heard calling at Stone Creek on May 8th (A.D.B.), at Ravenscar during May (A.J.W.), and on several occasions during the nesting season at Muston where a pair probably managed to rear a brood though direct evidence was not obtained (J.T.). Three were flushed from barley at Lissett on July 5th (C.H.V., S.V.), and two were calling in the same area four days later (L.S., H.O.B.).

118. Pheasant (517).—Single birds were recorded at Spurn on ten days between January 17th and November 25th.

119. Common Crane (461).—One was in the Lissett area from April 16th to 27th and was reported by C. H. & S. Voase and confirmed on April 21st by B. S. Pashby and H. O. Bunce.

120. Water-Rail (509).—At Spurn was recorded on 14 days—from the Warren reeds, at the Lagoons, and among the Chalk Bank bushes where it could only be a resting migrant and would not stay. The main periods were from March 27th to April 9th and October 14th to November 1st. Four were seen at Hornby Lakes on November 20th (G.R.P.) but was not recorded there between March and October. On the other hand occurred at Fairburn Ings in all months and at Harewood Park an adult with six chicks was seen on July 2nd (S.J.W., P.L.). Single birds occurred at Blaxton, Bretton Park, Winterset Reservoir, Hangthwaite and Heaton Woods during January and at Worsborough Reservoir, Winterset and Almholme during the autumn. A bird frequented an open flooded field at Cloughton during the whole of December taking cover in brambles on the railway embankment (R.S.P.), and a bird found dead at Grosmont on April 30th with a broken neck was another instance of damage to this species by telegraph wires.

125. Corncrake (504).—The species was heard calling about Sedbergh and Dentdale (H.W.B.), Kirby Malzeard and Healey (E.E.J.). The last date for Askrigg was August 20th where a bird was present all summer and probably bred (D.H.). Also near Langdon Beck on June 9th (C.M.R.), at Cowling on May 27th (E.G.). The *Whitby Gazette* reported the species on several occasions in fields at Stainsacre, and an autumn bird occurred at Hornsea Mere on September 10th (G.R.B.).

126. Moorhen (510).—At Spurn on May 7th one was at the arid Point! An albino first seen in 1958 was still present at Blaxton on December 31st (A.E.P., J.B.).

127. Coot (511).—The species nested in the Lagoons area at Spurn and again Fairburn Ings and Hornsea Mere recorded the largest concentrations. At Fairburn the numbers remained fairly constant with up to 1,000 in January, a maximum of 1,100 on July 24th and about 1,000 regularly thereafter to the year end. At Hornsea, the maximum of *c.* 3,320 on January 23rd gradually dropped to *c.* 370 on June 11th, rising again during August and September, but fell to *c.* 130 on November 6th, and had only risen to *c.* 530 by the end of the year. Numbers on all the usual other waters appeared to be somewhat fewer than previously as only on the Lower Derwent Floods during November and December did any flock reach more than 100. At Whitby on March 3rd a pair appeared very tired while resting in the Harbour (T.W.A.W.).

128. Great Bustard (457).—It should be recorded that the following was missed by inadvertence from *Yorkshire Birds* (R. Chislett). 1/3/1926, Islebeck Grange Farm, near Thirsk, one picked up dead that has haunted the area since Christmas. It was stated by the taxidermist to be a female (see *The Naturalist*, June, 1926).

131. Oystercatcher (452).—A bird at Eccup Reservoir on February 27th was the earliest record inland and single or pairs of birds occurred from then onwards up to August at ten or more non-breeding localities, with five at Swillington Ing on August 8th, the highest number (S.J.W., E.C.S.). Three were heard calling over

Bentley at 23.00 hours on March 13th (R.J.R.). This species is spreading on the Swale and was seen at several new sites (J.P.U.). On the coast *c.* 600 were at Tees Estuary on January 2nd and the species continues to increase slowly along the coast between Robin Hood's Bay and Filey, but has not yet nested (A.J.W.). Almost always present or passing at Spurn. Thirty-seven on May 5th was the maximum of spring; 46 passing south on June 18th included a party of 32; 212 on August 3rd included 14 parties, and there was steady passage on August 27th when 112 was the estimated number. The species bred in a field at Spurn.

133. Lapwing (449).—Large concentrations of this species can always be found near the coast in the flat agricultural country of the Vale of Pickering and on the open fields of the Wolds throughout the winter months. That some of these birds move farther inland during the winter is possible and assemblies probably associated with weather movements were recorded last winter as follows: Flocks of 500 at Knotford Nook Gravel Pit and Knaresborough Sewerage Farm on January 13th (F.S., J.R.M.). A south-easterly movement down the Gouthwaite Valley on January 23rd involving 260 plus (A.F.G.W.) with odd parties flying north-west at Carlton near Leeds, on the same day (D.B.I.); *c.* 240 flew south-west at Eccup on January 13th; 113 flew south or south-west on February 19th; 77 west on February 28th with *c.* 350 present on March 2nd. A south-westerly movement over Winterset on January 23rd involved 163 birds with a westerly movement on February 28th involving *c.* 140 (J.S.A.). The arrival and departure of this species along the coast is also somewhat confusing as D. R. Seaward recorded 250 in eight flocks flying between west and north-west at Redcar on February 27th continuing into the next day, and in the autumn on six days during October flocks seen at the same place were all flying in the same direction. Again lower down the coast at Atwick on January 23rd 72 passed north with 79 on February 28th, and in the autumn on October 18th just over 1,000 passed north with *c.* 200 passing south (G.R.B.). At Spurn a great movement southward took place from February 27th to March 1st with 1,638 passing in 3 hours 50 minutes. On March 1st, when a total of *c.* 2,000 was recorded and small numbers continued to pass during March. Passage during autumn was continuous without any great concentration, *c.* 100 on October 28th was the maximum. Large concentrations occurred at Fairburn Ings with 800 on January 1st, 900 on March 12th and over 2,000 on December 3rd and at Cooper Bridge Sewerage Farm on August 10th between 350 and 400 were seen, although few were present on subsequent visits (R.Cr.). The species was back on breeding grounds on Ilton Moor giving the spring note by February 26th (P.Y.), and scattered birds were giving the spring call near Leighton Reservoir on March 6th (R.C.). Flocking after the breeding season had begun by June 5th when 110 were seen at Scargill Reservoir (M.R.S.). The species bred on slag heaps at Fairburn Ing and a bird brooding young in the road at Cloughton on June 13th was the first evidence of breeding in that area for eight years (R.S.P.). See Ringing Appendix.

134. Ringed Plover (435).—A pair again bred at an inland water with newly-hatched young on June 28th and on July 27th a pair had two downy chicks (A.P.). At Spurn a number of pairs bred and nine young were ringed. Thirty-six at the end of May was the spring/summer maximum for Spurn but in the same month *c.* 600 were at Cherry Cobb Sands on May 10th (G.R.B.) dropping to *c.* 250 the following day and *c.* 100 by May 25th (H.O.B.). During February and March birds fed regularly on a football pitch near the sea at Redcar with a maximum of 80 on February 13th. Inland only odd birds seen at the various suitable localities such as Eccup, Fairburn Ings, Knaresborough S.F., Knotford Nook Gravel Pit, Ilkley S.F. and Swillington with five at Knaresborough S.F. on May 8th the maximum. A bird flew east up the High Street at Guisborough at 07.40 hours on March 16th (D.G.B.). Between July 23rd and October 9th the species was recorded on 36 days at Winterset Reservoir with maxima of 20 on August 21st and 28 on September 28th (J.S.A., *et al.*). At Cherry Cobb Sands *c.* 70 on August 28th was the maximum (A.D.B.), and a very poor autumn passage occurred there. High water levels at inland reservoirs in late summer and autumn accounted for a dearth of records. At Spurn numbers in August rose to *c.* 100 by the 29th and remained at from *c.* 50 to *c.* 70 for the next 12 days then dropped to the winter level. At Redcar the autumn peak was also reached on August 25th with *c.* 100 dropping subsequently to 20 or 30 and about 30 turned up at Scaling Dam on September 17th (D.G.B.). Records of single or up to four birds occurred during late July, August and September from nine waters in V.C. 63.

135. Little Ringed Plover (438).—Bred in five localities in the county with possible breeding in two others. One of the successful sites was a new one this year. The first bird occurred on March 27th and the last was seen on October 2nd in one of these areas. Elsewhere single birds occurred at Knaresborough S.F. on April 7th and May 8th (J.R.M.).

139. Grey Plover (444).—Compared with 1959 the number of records received from inland localities is very few. Between August 20th and October 2nd occurred at Winterset Reservoir on seven days with maximum of three on September 24th (J.D.P., *et al.*), and two birds at Whiteholme Reservoir on September 17th (V.S.C.). Up to five were present at Scaling Dam between September 15th and 21st (D.G.B., M.A.), and these together with several seen at Redcar on September 17th and 18th were obviously part of the big wader passage of that week-end. Two birds were still at Scaling Dam on October 2nd (M.A.). At Patrington Haven, H. O. Bunce recorded 15 on June 28th, *c.* 20 on July 12th and *c.* 100 on August 10th, and 15 were on Welton foreshore on October 8th (D.T.B.). However, at Spurn where always present, *c.* 30 on February 27th and 28th and 26 on March 27th, were spring maxima. The main passage came in September, 112 on the 5th, 135 on the 11th, *c.* 100 on the 25th, and *c.* 120 on October 4th.

140. Golden Plover (440).—For some reason this species is more regular and numerous at Spurn than it was a few years ago, flocks occurring of up to 60 in January, *c.* 100 on February 20th, *c.* 105 on March 6th, and *c.* 120 on March 20th. Then after April 7th only odd birds occurred. The return passage began on July 31st (54), flocks were only occasional with the largest flocks from August 30th to September 8th but with up to 70 on days in December; *c.* 200 on December 22nd was the largest of the year. At Redcar a resident flock in coastal fields had a maximum of *c.* 800 on January 1st and stayed on until March 21st, returning on September 5th with one or two present until numbers reached *c.* 150 on September 19th and remained at *c.* 150 to *c.* 250 until the year end (D.R.S.). On September 7th a flock of 13 flew straight out to sea going east and climbing higher (D.R.S.). A flock of *c.* 2,000 was on Cayton Carrs on January 15th not far from the coast (M.H.N.) while the largest wintering flock inland occurred at Poole where 800 plus were counted in three flocks within half a mile on January 12th (P.S.). *Circa* 550 on fields at Leathley on January 3rd; 500 plus at Haverah Park on March 27th, decreasing to 300 plus on April 21st (M.W.), and *c.* 200 near Birkby on April 6th (J.P.U.) are other spring flocks recorded. Ten had returned to Gouthwaite by February 6th (A.F.G.W.); 15 near Middlesmoor on February 9th (P.S.); and three to breeding grounds on Ilton Moor by February 4th (P.Y.). Arrived in good numbers in the Finningley District towards the end of July with 100 on the 9th, 150 plus on the 16th and 200 plus on the 23rd and 31st, numbers gradually dwindling to about 10 (A.E.P., J.B.). *Circa* 250 had returned to Haverah Park by September 5th (C.W.) building up to *c.* 350 on September 12th. There were between 400 and 500 at Riffa Beck on September 11th (A.H., B.L.).

142. Dotterel (446).—One spring and one autumn record. On April 30th, J. Lord saw a bird at close range on a bare area of the moor between Hutton-le-Hole and Castleton. The pale eye stripe, yellow legs, russet on lower breast and white tail in flight were all noted. One at Flamborough on September 18th was seen by E. J. Wise, who also gave accurate descriptions of the bird.

143. Turnstone (402).—Always present somewhere at Spurn. The spring maxima came with 41 on April 22nd and 23rd. With June only odd birds were recorded on a few days until July 19th. Autumn maxima were *c.* 120 August 3rd, *c.* 100 August 21st and 23rd, and *c.* 150 on September 4th. At Redcar a few birds were passing through in full breeding plumage on May 14th and 15th with five plus on the first date; one on July 21st and again on July 24th, thereafter four seen regularly with a maximum of 11 on August 14th. Away from the coast birds occurred at Scaling Dam, two on May 15th, and one on August 20th (D.G.B.); at Fairburn Ings, two on May 7th and three on May 8th, two on July 24th and one on July 25th; at Winterset, one on May 4th and 12th and one on August 20th (J.S.A.); at Flyflatts Reservoir, one on August 9th (D.A.S.) and at Whiteholme Reservoir, one on September 1st and 17th (V.S.C., I.M.).

145. Common Snipe (395).—At Fairburn Ings, 35 on March 13th was the spring maximum while eight on March 27th was the corresponding figure at Spurn, yet before both those dates a bird was heard drumming at Ilton on March 4th (P.Y.). The species bred successfully at Fairburn and, no doubt, at many other localities in

the county. Shortage of mud on reservoirs in late summer prevented normal assemblies. At Fairburn Ings, 120 on August 26th, 100 plus on September 3rd and 150 on November 6th were autumn maxima. *Circa* 50 were counted at Gouthwaite on July 2nd and 3rd (A.F.G.W.), with the largest numbers reported for V.C. 63, in the Doncaster area, 100 plus Hangthwaite on November 6th and 64 at Kirk Bramwith on December 3rd (R.J.R.), *c.* 50 at Almholme on December 16th (W.G.D.). At Spurn in autumn 14 on August 8th, was the highest figure reached. See Ringing Appendix.

147. Jack Snipe (398).—One seen at Scaling Dam on May 1st (A.V.) is the latest record of the spring, later by almost a month than the last bird at Knaresborough S.F. where one occurred on April 7th (J.R.M.). Single or small wisps occurred at 28 other places in the county including Spurn on varying dates between January and March and from August to the year end. The largest numbers together were four at Winterset Reservoir on October 16th and 23rd (J.S.A.).

148. Woodcock (393).—The Countess of Swinton saw a bird carrying young between the legs in Swinton Park near Masham towards the end of June. At Spurn was recorded on 17 days from January 27th to April 12th (four on March 26th), and on 15 days from October 14th to December 18th (three on October 24th), and birds occurred at South Gare, one on April 5th (M.P.) and two on October 23rd (V.F.B.). Birds were seen roding at Scaba Wood, Spotborough, on May 8th (J.B.H., A.E.H.), at Fairhill Wood on June 21st (E.G.), and two adults and three young seen at Ogdan Reservoir on June 13th (C.Ws.). A pair bred at Sandall Beat (C.J.B., *et al.*).

150. Curlew (388).—Birds were back in the breeding area at Ilton by March 3rd (P.Y.) and G. E. Alderson recorded *c.* 60 at Semerwater on March 5th with many birds scattered over Apedale Moors by March 24th. Two nests were found in a wold pasture in the Millington area where breeding has been suspected for the last three years (C.N., H.O.B.). Now known that breeding was attempted just below the chalk at Nunburnholme in 1956 and subsequent years, successfully in 1958 but not apparently since following ploughing up of the pasture (C.N.). Coupled with the breeding of several pairs just off the chalk near North Grimston since about 1955 these records suggest a most interesting spread taking place into uphill country where breeding has never been recorded in the past.

The wintering flock at Gouthwaite probably present throughout the first three months with maximum counts of 90 plus on January 23rd, and 80 plus on February 6th, and 40 plus on March 13th was the last record. Thirteen on October 6th may have been the nucleus of the winter flock which was larger than ever reaching 100 plus on October 23rd and 200 plus on November 27th (A.S., M.B.T., A.F.G.W.). On August 22nd birds passed continually, calling all the time, over Ossett between 02.45 and 03.15 hours (A.F.). Nineteen flew over Doncaster to the north-west on August 4th (A.E.P., J.B.) and several other records of birds flying over various towns on dates throughout the year mentioned almost every direction of the compass. Spurn was never without a few, *c.* 45 on February 20th and *c.* 60 on the 21st and 72 on March 21st, with 58 on April 3rd were spring maxima. Numbers built up again from July 30th with 56 on the 31st, *c.* 70, *c.* 100, and *c.* 108 on August 23rd, 24th, 25th; *c.* 100 on the 30th, and 140 on September 3rd. Afterwards numbers were fewer. At Redcar 20 in a flock flying high over the sea on June 21st, and from July 2nd a continuous thin passage of birds was seen flying north-west in off the sea (D.R.S.). On July 21st a Curlew on Masham Moors was watched eating bilberries (P.Y.). Fifteen at Semerwater on October 28th is possible evidence of the species remaining inland (R.C., P.J.M.), as were 30 at Ilton on November 27th (P.Y.).

151. Whimbrel (389).—Three at Patrington Haven on April 28th were the first (H.O.B.), and throughout May, June, July, August, records were frequent along the East Riding coastline as far north as Filey Brigg with *c.* 30 on May 13th and *c.* 20 on July 27th, and August 26th, at Patrington Haven as the maxima. Inland Winterset Reservoir recorded one on May 8th and six on May 12th (J.S.A.), on two dates in July and two in August (eight on the 28th), the last being one on September 18th (J.B., J.S.A.). Two flew over Denby Dale to the south on May 20th (P.G.R.B.). Seven flew south-west calling loudly over Masham on August 19th (E.E.J.) with one on Ilton Moor on July 23rd and one on Colsterdale Moor on August 23rd (P.Y.). In the Tees Estuary numbers increased rapidly from July 14th, reaching over 100 by the 31st, and there was a heavy passage all month during August. This was confirmed from Redcar where D. R. Seaward recorded larger

flocks than seen previously. This species was seen regularly from August 7th at Redcar with the following notable flocks—13 on August 7th, 16 on August 14th, 40 on August 20th, 16 on August 25th, and 11 on September 3rd. The last birds occurred, one at Redcar on September 20th (D.R.S.) and one at Hornsea on the same day (G.R.B.). The usual birds passed Spurn in May (12 on the 7th) and in July to September when maxima were—30 on July 30th, *c.* 60 on August 3rd and *c.* 40 on August 30th and 31st, with only a few to the last on September 26th.

154. Black-tailed Godwit (387).—At Knotford Nook Gravel Pit a single bird was watched for 15 minutes on April 4th (P. Swallow). At Fairburn Ings, two on April 5th and two on May 22nd and 24th; one at Scaling Dam from April 24th to 27th (D.G.B., *et al.*), and one at Patrington Haven on May 13th (H.O.B.) were all spring records.

All autumn records come from the East Riding with one flying south off Hornsea on August 7th the first (G.R.B.). At Patrington Haven single birds occurred on August 10th and 26th (H.O.B.). One occurred at Brough Haven on October 1st (A.P.) and at Cherry Cobb Sands two on August 25th, one on August 28th, one on September 6th, two on September 9th, two on September 17th, one on September 21st and a last one on November 5th (H.O.B., *et al.*).

155. Bar-tailed Godwit (386).—Present at Spurn on most winter days but scarce from May to August. Spring maxima were—95 on January 31st, *c.* 115 on March 23rd and 24th, and of autumn—27 on August 30th, remaining few until November 23rd (43), 102 December 2nd, *c.* 130, December 7th. At Cherry Cobb Sands numbers were higher in the spring with *c.* 100 on February 7th, *c.* 150 on March 20th, dropping to *c.* 30 on April 24th (A.D.B.). In the autumn the first were recorded on September 9th (*c.* 25) with *c.* 60 on September 11th and *c.* 50 on October 2nd (B.A.G., A.D.B.). Four occurred at Scaling Dam on August 20th (D.G.B.) and a flock of 21 birds flew north-west at Redcar on September 3rd (D.R.S.). On September 22nd at Coatham Sands, *c.* 190 were seen (P.J.S., D.G.B.). Inland single birds occurred at Fairburn Ings on June 9th, July 5th and July 17th and at Winterset Reservoir on August 31st (J.B.), two on September 5th, one on September 7th (R.N.R.), and one on September 17th was still present the following day (J.S.A.).

156. Green Sandpiper (424).—The majority of records are for the usual dates between July and early October with records of small numbers from at least 25 localities. The biggest number seen were five at Guisborough in August (T.B.R.) and a party of eight at Patrington Haven on August 26th (L.S.). A single bird was recorded at Worsborough Reservoir throughout January and into February (D.S., *et al.*). One near Winterset on January 9th (A.F.); two at Bretton Park on three dates in January and February (A.N.S., J.C.S.E.). It is probable that these birds all wintered in the respective areas, and up to three were again present at Worsborough Reservoir between October 23rd and December 10th (D.S., T.M.C.), with one or two recorded at Almholve between October 16th and December 16th (W.G.D.), also birds which may have wintered in the districts. Three were seen by a tarn on the moors above Askrigg on April 17th (R.C.); one at Farnham on April 24th (N.E.A.); and one flew near Winterset on May 1st (J.S.A.). One associated with Whimbrel flying west over Redcar on August 21st (D.R.S.). At Spurn one appeared on April 9th, one on July 22nd and from August 4th appeared daily until September and single birds on some days to October 8th. No more than five (August 14th) were seen in a day.

157. Wood Sandpiper (423).—The only spring record is one at Fairburn Ings on May 8th and 9th with the next a bird in the same locality on July 9th, again on August 6th and periodically to the 27th, and on September 10th and 17th. At Spurn three on August 4th were the first of the year and up to three appeared on most days to the 20th and on three days after to the last on September 25th. One stayed at Horbury S.F. from July 7th to 15th (R.P., R.P.S.). A party of four were at Scaling Dam on August 4th (J.L.) and one at Welton Water on August 6th and 14th (B.S.P.). One at Thrybergh Reservoir on August 4th (D.K.); one at Winterset Reservoir on August 28th and 30th (J.S.A., *et al.*); three at Settle S.F. on August 7th (A.P.) and one dropped into Knaresborough S.F. in early morning of August 14th and was watched at distances down to ten yards before it flew off west (J.R.M.). At Cherry Cobb Sands single birds only occurred on August 28th, September 11th and 17th (A.D.B., B.R., H.O.B.).

159. Common Sandpiper (421).—Earliest records are all of single birds with one at Addingham Moorside on April 1st the earliest (O.M.P.) followed by one at

Masham on April 6th (E.E.J.); two at Gouthwaite the same day (W.G.); one at Winterset on April 9th and 16th (J.S.A.); one at Hexthorpe on April 13th (R.J.R.), Numerous at Gouthwaite by April 23rd while the first birds occurred at Fairburn Ings on April 24th (three). At Spurn, three on the 7th and one on the 22nd were all of spring.

At Fairburn, 16 on July 25th was the peak where the species occurred daily to mid-September. At Hornsea Mere recorded on several dates between late April and mid-September with five on May 12th, 27 on August 6th, nine on August 8th and 11 on August 28th the largest numbers (G.R.B.). Began to reappear at Spurn on July 6th (three) with the last on September 18th. Eight on August 11th and nine on August 23rd were the maxima. Late birds from October onwards occurred at Ogden Reservoir on October 1st (J.C.P.), Gouthwaite on October 2nd (W.C.W.), Knotford Nook Gravel Pit on October 5th, Fairburn on October 16th, Whiteholme Reservoir on October 23rd (V.S.C., I.M.), Redcar on October 18th (D.R.S.), Hoyle Mill Dam on October 30th (M.N.R.), and an exceptionally late bird on a small flood at Atwick on December 3rd (G.R.B.).

161. Redshank (428/30).—Return to inland haunts indicated by records of one at Fairburn Ing on February 2nd, one at Swillington Park on February 14th (V.S.C., I.M.), one at Ilkley S.F. on February 28th (L.G.D.), one at Hamphthwaite on March 2nd (P.J.C.), one at Gouthwaite the same day (A.F.G.W.) and at Ilton Moor on March 6th (P.Y.) by which date the species had also returned to Middlesmoor (1,000 feet) (D.S.). The species was also reported from many places in spring and summer.

In the Middlesmoor area the species departed from the breeding area by June 13th. At Patrington Haven H. O. Bunce made the following estimates at the time of the change of the tide—*c.* 250 on April 28th, *c.* 200 on June 28th, *c.* 850 on August 10th *c.* 2,100 on August 26th, *c.* 1,200 on September 8th. At Spurn the species was usually present in some numbers (*c.* 150 on January 5th) with *c.* 220 on April 16th and *c.* 200 on April 23rd, after which numbers fell and from early May only noted form the one or two pairs of local breeders. Numbers again appeared on June 25th (30) to increase until the maximum was reached with *c.* 500 from September 5th to 8th and on the 22nd and 23rd then fell again. Single birds occurred at Gouthwaite on October 31st and November 12th and 15th and at Fairburn Ings on October 16th, and several winter records were received from farther inland where R. J. Rhodes reports Redshanks as increasing as a winterer at Almholme. Eight at Winterset Reservoir on January 2nd (J.S.A.) and three at Almholme on December 12th (W.G.D.) are indicating records.

162. Spotted Redshank (431).—Spring records include one at South Gare on April 14th (M.P.), one at Fairburn Ings on April 23rd and one at Patrington Haven on April 28th (H.O.B.), one at Scaling Dam on May 8th which was possibly the same bird seen on May 15th and 17th (D.G.B., M.A.). Inland during the autumn records were very few with one at Leighton Reservoir on August 14th (E.E.J.); two on August 25th and one on August 27th at Fairburn Ings; one at Swillington Ings on August 27th (J.C.P.); one at Whiteholme Reservoir on August 25th (V.S.C., I.M.); and one at Winterset Reservoir which only stayed for a few minutes on September 4th (D.S., *et al.*). Along the coastal fringe, however, records from late June into October are too numerous to detail individually, single birds occurring at South Gare, Redcar, Hornsea Mere and Flamborough on various dates. Along the Humber birds were recorded at Patrington Haven and Cherry Cobb Sands on 15 dates with six at Patrington Haven on September 8th (S.M., *et al.*), the largest number recorded. One was at Scaling Dam from September 15th to 18th and was joined by three others on the last date (D.G.B., M.A.). At Spurn occurred from August 3rd fairly regularly until September 25th, one, two and three birds were the last ones in October (2nd, 13th and 22nd).

165. Greenshank (432).—One which stayed at Worsborough Reservoir for about 20 minutes on April 13th was the first spring record (T.M.C.) and is followed by occurrences on eight days from April 15th at Spurn (four on May 9th) and on June 18th, 25th and July 9th. One was at Flamborough on May 7th (D.A.S., J.R.C.) and single birds occurred in the Holderness area on May 10th, 14th, 17th and 28th (G.R.B., H.O.B.). Single birds at Eccup Reservoir on May 7th and at Fairburn Ings on May 14th and 15th, and June 4th. The return migration of autumn was, however, extremely numerous and records have been received on many dates from between late July to late September from 40 different localities, so that only the larger flocks

can be referred to. Eight occurred at Whiteholme Reservoir on August 25th (V.S.C., I.M.); between four and seven were recorded at Winterset on 31 days of August and September (J.S.A., *et al.*); nine flew south-west over Doncaster on September 17th (J.B.H., A.E.H.); 12 at Roundhill Reservoir, near Masham, on September 4th was most unusual (E.E.J.). At Patrington Haven numbers ranged from seven to 13 (September 8th) with 11 and 10 on August 9th and 10th and 13 on the 30th at Spurn. The last appeared there on October 24th. Other late October records—one flying over Woodhouse Mill, Sheffield, on October 23rd (F.N.B.); one passing south-east at Hornsea Mere on October 21st (G.R.B.); one at Welton Water on October 22nd (T.J.); two flying high with migrating Lapwing on October 19th at Redcar (D.R.S.).

169. Knot (403).—Records away from the coast include one at Scaling Dam on April 3rd and May 15th (M.A.) and one in the same place on September 17th (D.G.B.). A party of 17 birds flew east at Fairburn on August 27th and one occurred there on October 1st. Occurred at Fly Flatts Reservoir—three on August 22nd, one on August 23rd (R.W.N.K., A.D.W.) and at Winterset Reservoir on July 24th to July 31st (in full summer plumage), August 18th to September 8th (three, September 8th) (J.S.A., *et al.*). The remarkable numbers recorded from Whiteholme Reservoir in August, 1959, were repeated by a record of 24 there on September 1st (V.S.C., I.M.), while the crossing of the Pennines by this species is again confirmed from a record of a bird in full summer dress on Pen-y-Ghent by the road leading to Halton Gill on July 24th. The bird was very reluctant to fly because of dense mist (M.N.R.). Along the coast P. J. Stead recorded approximately 6,000 in the Tees Estuary on January 9th, while flocks were normal at Spurn to early April and from August with maxima of *c.* 4,000 February 26th, *c.* 3,500 March 27th and *c.* 3,000 on September 15th. Birds fluctuated considerably from day to day. H. O. Bunce records *c.* 100 on May 11th and *c.* 250 on May 25th at Cherry Cobb Sands with autumn records of *c.* 100 on July 27th and *c.* 500 on August 10th and *c.* 2,200 at the tide change on September 8th (S.M.). Seventy-six on the rocky coastline of Filey Brigg on August 26th is a large flock for that area (R.H.A.).

170. Purple Sandpiper (415).—The flock on Filey Brigg stayed fairly steady between 40 and 50 until late April, falling away with the last record 26 on May 3rd (E.J.W., R.H.A.). The species had returned to that locality by September 19th when four arrived (E.J.W.) building up to the usual number of about 50 by November 12th (R.H.A.). Nine seen on Bridlington Harbour on April 5th (S.M.) doubtless stayed as usual during the winter months. Other records include 11 seen flying off Hornsea on October 3rd and five on November 10th (G.R.B.); three at South Gare on May 1st and one on August 3rd with two on August 23rd (A.V., M.P., P.H.) and single birds at Spurn on January 2nd and September 5th.

171. Little Stint (407).—This was undoubtedly the most remarkable year for Little Stints and only a brief summary of the large numbers of records received can be given here. At Teesmouth numbers were building up to unusual proportions in the first fortnight of September with *c.* 30 in the area on the 11th and farther south down the coast records of single birds at Filey Brigg, Cherry Cobb Sands, Hornsea Mere, Flamborough, Beverley S.F., Melton and Brough Foreshores were also received during late August and early September with up to 13 present at Cherry Cobb Sands by September 11th. A fresh influx occurred on September 17th bringing the total at Teesmouth to over 200 where similar high numbers persisted for about ten days. During the same period unusually high numbers were recorded from Filey Brigg, three on 17th (E.J.W.); Flamborough, 10 on 18th (H.O.B.); *c.* 150 on Brough Saltings on September 21st (S.M.); 17 at Primrose Valley on September 24th (R.H.A.); 48 at Scaling Dam on September 17th. Towards the end of September and into October numbers gradually fell away but up to five were still present at Teesmouth on October 7th: 11 at Beverley S.F. on September 27th (D.A.G.); 14 at Cherry Cobb Sands on October 2nd (A.D.B., B.R.) and seven at Broomfleet Island on October 29th (A.D.B., B.R.). At Spurn the species occurred from August 28th to September 24th with the maximum of 10 on September 18th and 19th corresponding with the above records. This influx was reflected at one inland locality when nine were at Winterset Reservoir on September 17th (J.B.) with 36 the following day (J.S.A., *et al.*), and 30 on September 20th (M.N.R.), when numbers dropped to the last, four on October 4th (M.N.R.). Other inland records include two at Gouthwaite on June 5th with one still present the following day (D.S., A.F.G.W., *et al.*); five on August 14th and two on September 25th at Fairburn Ings;

one at Fly Flatts Reservoir on September 11th, October 4th and 6th (A.D.W., D.A.S., J.C.P.); Cooper Bridge S.F., two on September 18th and one on September 20th (R.Cr.) and one on September 18th at Adwick-le-Street Sewerage Works (R.J.R.).

173. Temminck's Stint (409).—One occurred at Hornsea Mere on September 22nd and was seen by G. R. Bennett.

178. Dunlin (404/5).—Nested on several moors in V.C. 65 with nine pairs on one moor and up to three or four pairs on several others. In V.C. 64 one pair was seen with four chicks. Occurred on passage in both spring and autumn at many inland sewerage farms, though occurrences in autumn were restricted owing to lack of mud. Yet maximum numbers at Winterset reached 48 on August 6th, 58 on October 1st and 53 on October 9th (J.S.A., *et al.*). At Fairburn Ings, eight to ten on May 7th and 9th were the spring maxima, 15 on September 4th the autumn maximum. Thirteen occurred there on December 27th. The species was seen fairly regularly at Scaling Dam with a maximum of 14 on October 2nd (M.A.). At Spurn, the species was always present, up to 1,500 estimated in late March and up to 2,000 on October 21st and 22nd, though numbers fluctuate very considerably from day to day. See Ringing Appendix.

179. Curlew Sandpiper (406).—At Spurn, one on August 21st was the first and one on September 24th the last. Maximum was 19 on September 8th. Eight occurred at Cherry Cobb Sands on May 10th (G.R.B.) with three plus on September 7th (H.O.B.), *c.* eight on September 9th (D.A.G.) and three plus on September 17th (H.O.B.). Also occurred one, Hornsea Mere, August 6th (G.R.B.); *c.* 10, Brough Salting, September 4th and 5th (S.M.) and 7, September 21st (S.M.); one, Filey Brigg, September 17th (E.J.W.); two, Primrose Valley, September 24th (R.H.A.); three or four at Scaling Dam, September 17th (D.G.B.) and between two and seven at Winterset Reservoir on nine dates between September 3rd and 24th (J.S.A., *et al.*). A single bird claimed to have been seen at Fairburn Ings on August 18th by R. W. N. Knapton was not mentioned in the Fairburn log.

181. Sanderling (416).—Usually a few present at Spurn except in June and July, in spring the largest numbers were noted from May 13th to 29th (35 maximum on the 28th) appeared daily from July 16th—*c.* 90 on July 24th and 30th, *c.* 130 October 4th, after which numbers fell to under 20 and on a few days the species could not be found. At Redcar, *c.* 100 present until early April when numbers fell to 20 or 30, absent from May 21st (30) to July 23rd (three), when numbers gradually built up to *c.* 150 by October 23rd and remained more or less at this level to the year end (D.R.S.). Away from the coast four stayed at Scaling Dam from April 4th to 7th (H.B.K.R.); three at Fairburn Ings on May 14th. A rather sickly-looking bird at Gouthwaite on June 5th was still present the following day and one was also present on June 19th (W.C.W.). J. R. Mather caught a juvenile at Knaresborough S.F. on August 13th. There was one at Mickleton Flash on August 8th (A.F.) and from one to three occurred at Winterset Reservoir on July 26th, August 13th, 18th and 19th (J.S.A., R.P.S.).

184. Ruff (417).—One flying south off Hornsea on May 15th was the only spring record received (G.R.B.). In the autumn, however, the species was recorded from seven inland localities and from many points in the East Riding with flocks of unusually large numbers included. At Ecpp Reservoir 17 landed on a ploughed field on September 17th disappearing to the west when flushed. At Winterset Reservoir was recorded on 14 dates between August 7th and September 6th with six on August 28th as maximum (J.S.A., G.A.). At Scaling Dam the species was occasional during August and September with maxima of eight for August and four for September. At Spurn two came on August 3rd and the species continued to be seen until September 24th with a last bird on October 3rd. Ten on August 27th was maximum with eight on the 29th and fewer in September. For the rest of the East Riding records come from nine different localities with very large flocks included, between 10 and 17 were at Beverley S.F. on August 31st and September 1st (J.T.L.) and 10 were still present on September 7th (G.R.B.). At Cherry Cobb Sands, five on August 8th were the first (D.J.M.) but numbers reached about 50, with one observer thinking probably 60 to 70, between September 17th and 24th, with *c.* 40 still present on October 22nd (H.O.B., *et al.*). Two late records include two at Cherry Cobb Sands on November 5th (H.O.B.) and one at Patrington Haven on December 27th (A.C.).

189. Stone Curlew (456).—One at Flamborough on October 1st was seen by A. J. Williams and A. F. G. Walker.

193. Arctic Skua (493).—For seven to pass at Spurn on June 7th was curious. Odd birds appeared in July, and from August 27th through much of September the species was frequent with maxima of *c.* 140 on August 30th and 213 on September 16th. The last passed on October 16th. At Teesmouth a few passed South Gare during July with a few most days during August, followed by regular passage in September, although late records on the Durham side during November must, although not seen from the Yorkshire coast, have passed during that month. Along other parts of the Yorkshire coast single birds were seen at Hornsea on three dates in April and three in May with a more pronounced movement in the autumn, maximum counts being 25 south off Hornsea on August 11th and 27th (G.R.B.), 38 south off Filey Brigg on August 27th (R.H.A.) and 29 on August 30th (E.J.W.). One was seen flying upstream in the Humber at Cherry Cobb on August 28th (A.D.B., B.R.). One off Hornsea on October 21st (G.R.B.).

194. Great Skua (491).—Two spring records both from Hornsea of single birds on April 17th and 24th (G.R.B.). In the autumn the same observer recorded two at Hornsea on July 2nd and one on September 17th. Four passed Filey Brigg on August 27th (R.H.A.), two on September 18th (R.H.A.), and one on September 20th (R.S.). At Redcar one flew north-west on August 11th, one on September 4th and four flew about 200 yards inland before turning out to sea on reaching a built-up area on September 12th (D.R.S.). At Spurn noted on July 23rd, on seven days in August, on ten days in September, on nine days in October and on November 6th (two) and 27th. Maxima were 10 September 16th, 19 September 26th and 15 October 9th. At South Gare seen on six days during August, maximum three.

195. Pomarine Skua (492).—At Spurn recorded on four days in September and October, never more than two (September 16th, P.J.M.). Only other records are an adult off Hornsea on June 30th (G.R.B.) and an immature chasing Herring Gulls at Flamborough on October 16th (H.O.B., A.J.Ws.).

196. Long-tailed Skua (494).—One bird at Spurn on September 16th had a more buoyant flight when compared with passing Arcics and was small and immature. It was probably of this species.

198. Great Black-backed Gull (486).—At Eccup Reservoir the January maximum was 110 on the 20th, February maximum 35 on the 22nd, and March maximum 34 on the 5th with none after the 20th except one on the 31st. Maximum in April was 23 on the 7th, this species being seen on nine days in that month. Recorded occasionally in May and singles on July 1st and 7th. Occurred in September on 21st and 25th, October maximum was 15 on the 23rd, the November maximum 20 on the 29th, December 50 on the 18th. No counts were received for the Washburn Valley Reservoir roosts but seven on a rubbish tip at Harrogate were seen on February 14th (M.R.S.), and reports of smaller numbers at both ends of the year from several localities in the west. Towards the south of the county single birds occurred in January and February at Thrybergh and Southfields Reservoirs and at Woodhouse Mill, Sheffield. In the autumn single birds were recorded at Blackmoor-foot Reservoir, Hangthwaite, Southfields Reservoir, Woodhouse Mill, Sheffield (three on December 3rd, R.G.H.) and at Adwick-le-Street (two on December 11, R.J.R.). At Scaling Dam a good deal nearer to the coast a count of 70 on March 17th was the largest number seen there up to that date, but this total was exceeded by 80 birds on October 23rd (M.A.). Spurn is never without the species, the maxima for the year *c.* 250, January 31st; 280, April 9th; and mainly immatures in May to July, *c.* 260, August 10th; *c.* 250, August 27th; *c.* 350, September 6th; *c.* 500, September 14th; *c.* 550, September 18th; *c.* 500, September 28th; *c.* 1,500, October 1st; *c.* 800, October 7th; *c.* 300, October 27th; and later down to *c.* 100 or less. On October 1st, 1,151 were counted passing north to north-east in two hours from 5.30 a.m. (G.M.T.).

The Scarborough district is likewise never without the species and counts of 300 or more are not infrequent when birds come into the smaller bays along the coast to roost during the winter months (A.J.W.).

Other inland records come from Leighton-cum-Roundhill Reservoirs where E. E. Jackson recorded nine on January 10th, two on September 4th, three on October 16th, one on November 6th, four on November 13th, six on December 18th. At Ilton Reservoir, P. Young recorded one on March 27th, two on April 4th, six in a nearby field resting on August 24th, and one on December 18th.

199. Lesser Black-backed Gull (484/5).—The counts made at Eccup Reservoir and at Leighton-cum-Roundhill Reservoir during the year show some

similarities but at the same time some marked differences. At Eccup, roosts began to build up in March and after 80 on the 19th numbers were fairly steady at 50/60. Maximum for April was *c.* 450 on the 18th, but the species probably did not exceed 100 in May. In August maximum count of *c.* 4,000 on the 12th, September maximum of *c.* 4,400 on the 18th, decreasing to 1,000 plus on October 2nd, with from 50 down to 10 in November and did not exceed 10 in December. At Leighton, E. E. Jackson made counts of 47 on January 1st, 40 on January 10th, with no further records till 10 on August 14th, 51 on September 4th, 75 on September 18th, 763 on October 16th, 484 on November 6th, reaching the peak of *c.* 1,200 on November 13th, at the time when the Eccup numbers had fallen sharply. In December at Leighton numbers were 190 on the 18th and 160 on the 25th. All counts were of birds coming into roost and from mid-October a few Herring and Common Gulls came in as well.

At Gouthwaite there were two on January 25th and 31st, four on February 13th, and two on February 21st (V.S.C. and M.B.T.) with *c.* 110 roosting there on October 28th (M.B.T.). One hundred plus at Brotherton on July 19th (A.H.B.L.). At Redcar a north-west passage was recorded on April 11th, 14th and 15th and again on May 5th (D.R.S.).

Birds mentioned as being of the Scandinavian race include four out of 12 present at Pontefract on January 8th (J.D.P.) and two of six birds present at Worsborough Reservoir on October 23rd (C.B., T.M.C.). P. Young recorded six with very dark backs and probably Scandinavian at Ilton Reservoir on April 4th and about 50 in a field near Leighton Reservoir on December 10th.

At Spurn there was one on January 1st, a few in April and forward to November. Maxima *c.* 15, June 11th and 12th; 10, September 17th. See Ringing Appendix.

200. Herring Gull (482).—At Spurn maxima *c.* 150, January 29th; *c.* 500, April 9th (day of much southward passage by gulls) and no more large passage until *c.* 80 on October 30th; *c.* 200, November 3rd; *c.* 100, November 4th and 27th. At Redcar, a heavy north-west passage was noted on four days between February 19th and 27th (D.R.S.). Inland at Fairburn Ings a total of 2,000 plus in January was not approached by any other locality. At Eccup Reservoir, *c.* 55 on July 7th was unusual where a maximum of 20 occurred on August 12th and 30 on October 24th increasing to 100 plus by the end of November, with the December maximum of 550 plus on the 31st. At Knaresborough S.F., *c.* 100 on January 10th, *c.* 150 on January 17th (J.R.M.). About 350 on a Harrogate rubbish tip on February 2nd had decreased to 40 by the 14th, at the end of a cold spell (M.R.S.).

201. Common Gull (481).—At Spurn fluctuated heavily in January (*c.* 500 on the 20th), *c.* 280, March 12th; *c.* 825, April 9th; *c.* 400, May 30th; *c.* 500, June 1st. The main autumn influx came with *c.* 1,000 on October 16th. At Eccup Reservoir, autumn monthly maxima were *c.* 5,900, August 24th; *c.* 4,750, September 11th; and 6,000 plus, October 2nd, dropping to 300 on December 26th. The onset of post-breeding dispersal was probably indicated by five flying north at Gouthwaite on July 3rd (I.R.D., A.F.G.W.). See Ringing Appendix.

202. Glaucous Gull (487).—Again the usual single birds, mostly juveniles, were seen at Scarborough at both ends of the year, e.g. two immature birds, one appreciably darker than the other, from January 10th to 17th (T.M.C.) and one on several dates in December (A.J.W.). One flew south at South Gare on March 23rd (M.P., P.H.) and a total of five occurred in the Tees Estuary during April with one adult bird. One occurred in Jacksons Bay, near Scarborough, on October 15th (M.H.N.); one at Hornsea Mere on October 16th (G.R.B.); one probably a third-year bird, fed on a rubbish tip at Redcar on December 31st. One at Blackmoorfoot Reservoir on February 7th was recorded as Glaucous/Iceland (D.W.) while one at the same place on February 20th (? the same bird) was thought to be probably Iceland (P.G.R.B.). At Spurn an immature bird on February 13th was probably of this species and an adult passed south in the early morning of October 23rd (R.F.D., I.H.W.).

203. Iceland Gull (488).—A pale biscuit-coloured immature was present in Scarborough Harbour from February 21st to at least March 13th (T.M.C., A.J.W.). One was seen at South Gare on April 19th (M.P., P.H.).

205. Mediterranean Black-headed Gull (479).—A bird seen at Scarborough on January 30th was described by T. M. Clegg as a conspicuously pallid gull, about the size of the Common Gull with mantle and wings very pale grey, no darkening on primaries and no white borders. Dark post-eye spot and signs of hood development. Bill dark, reddish towards base. Both Common and Black-headed present

for comparison, the bird was watched for 25 minutes. G. R. Bennett also saw a gull of this species at Atwick on October 16th, in first winter plumage.

207. Little Gull (477).—In the first half of the year birds occurred at Redcar, a first winter bird flying south-east on January 23rd (D.R.S.); an adult in winter plumage in Whitby Harbour on March 24th (G.N.); one at Winterset Reservoir on May 10th (J.S.A.) and two immatures at Hornsea on May 14th with one still present the following day (G.R.B.). In the autumn adults occurred at Filey Brigg on August 20th and 23rd (R.H.A., E.J.W.) with another adult there on September 16th (E.J.W.) followed by an immature two days later (R.H.A.). At Hornsea Mere a first winter bird on August 26th was joined by a second for August 27th and 28th. An immature was off Hornsea on August 27th and another occurred over the Mere on September 3rd and 11th, with an adult on October 15th, and an immature on December 26th (G.R.B.). An adult was seen at Flamborough on October 3rd (A.J.Ws.). At Spurn a juvenile came and passed southward on August 7th, two on August 28th were also juveniles, as was one on October 8th.

208. Black-headed Gull (478).—Gulleries continued to be harried and persecuted, but counts of about 1,000 pairs at one of the moorland colonies in the south was made on May 23rd (L.M.) and about 200 pairs at another site the previous day (E.G.). Twenty birds were sitting on nests at Aldward Sewerage Works on May 24th (R.J.R.) and upward of nine pairs at Altofts on June 4th (J.C.). Counts at some of the roosts include up to 2,500 at Leighton-cum-Roundhill Reservoirs on January 1st, where none were recorded on March 20th, but birds began to return in August and September in small numbers, reaching over 1,000 on October 16th, 750 on November 6th and 2,300 on November 13th, with 1,000 plus on December 18th but none on December 25th. On March 6th, *c.* 600 came in to roost at Leighton Reservoir, many without dark heads. At Eccup Reservoir the August maximum was *c.* 1,000 on the 15th, 1,400 on September 18th and 6,000 plus on October 2nd, with 9,000 counted on December 26th. At Gouthwaite Reservoir on June 12th an albino appeared to be paired with a normal bird. The bill was orange/red, upper parts white, with no grey on the mantle, and the wings also all white. Only a few at Spurn until the spring passage began—*c.* 390 March 29th; *c.* 1,250, March 27th; *c.* 910, April 9th; after which the species became few again. Nearly all adults came to the Humber shore at dusk on June 25th. July 31st gave a count of *c.* 2,000 on the Humber mud west of the Warren before the morning high tide (C.W., G.R.B.) and numbers remained large for some days, *c.* 500 on October 5th and 16th, was the maximum for a day in autumn, when birds from across the North Sea could be expected. See Ringing Appendix.

211. Kittiwake (489).—Continuous and frequent sea watches at Spurn produced more Kittiwakes than were recorded a few years ago. Maxima were *c.* 450, April 17th; *c.* 100 May 25th; *c.* 150, June 12th; *c.* 1,700, June 25th; *c.* 1,650, July 23rd; 204, September 21st; and *c.* 300, October 10th. Farther north on the coast the puzzling picture of Kittiwake movements remains very difficult to interpret as is indicated by the following records. On April 17th *c.* 1,200 passed north off Hornsea (G.R.B.) with *c.* 4,000 passing north off Flamborough the same day (P.J.S.). Vast numbers passed Flamborough northwards with counts of 6,000 per hour between 06.00 and 08.00 hours on May 7th (A.J.Ws.). Counts made by G. R. Bennett off Hornsea recorded *c.* 1,200 passing north on May 29th, *c.* 1,100 in the same direction on June 29th and 655 also north on June 30th. Birds were passing south off Filey Brigg on July 30th and 31st (R.H.A.), the same day that large numbers were counted moving south off Ravenscar (A.J.W.), but none passed Flamborough that day moving south (H.O.B.). Passage south continued past Filey Brigg on August 13th and 20th (R.H.A.) and there was a fair-sized movement north off Flamborough on September 4th (H.O.B.) followed by *c.* 1,500 passing north off Hornsea on September 21st (G.R.B.).

Inland occurred at Fairburn Ings, one on April 21st and 28th, May 8th and October 16th, one at Eccup Reservoir on December 4th, one at Worsborough Reservoir on January 1st and 3rd (D.S., *et al.*) and an adult bird there on April 11th arrived from the east at 18.50 hours and left 20 minutes later to the north-west (T.M.C.). An adult was at Winterset Reservoir on December 4th (J.S.A.).

212. Black Tern (462).—The first birds of spring arrived at Spurn on April 17th (3) and 34 on May 1st with 18 on the 31st. At Winterset two arrived from the east at 07.15 hours on May 3rd, followed by one on May 8th. One present in the evening of May 11th had not been there in the morning, and four more arrived overnight or in the early morning of May 12th. On May 14th, four were present at 07.00

hours and six more arrived singly during the day. These ten were still present later in the day but had gone by the following morning (J.S.A., *et al.*). At Hornsea Mere a very early bird on April 17th was followed by occurrences on five other dates (six on May 12th and three on June 5th (G.R.B.)). At Fairburn Ings, one on May 8th was the beginning of a heavy passage during that month, reaching a peak of 51 by the 13th decreasing sharply thereafter, but eight also occurred on June 4th and the last on June 6th. On May 13th nine were at Finningley, one at Blaxton and five at Worsborough Reservoir followed by another bird on May 15th, when one was seen at Denaby Ings; two occurred at Woodhouse Mill on May 17th. In the north-east the only spring record was two at Scaling Dam on May 15th (D.G.B.). At Swillington Park single birds occurred on three dates in May and at Malham Tarn on two dates. One was seen at Semerwater on June 5th (R.W.M.K.). In the autumn all occurrences were in the months of August and September. At Spurn the maximum was 57 on August 28th, and a last bird appeared on September 25th. At Hornsea the species was recorded on 22 dates, with maxima of 12 on August 10th and 11th and 18 on September 3rd (G.R.B.). The heavy spring passage at Fairburn was not repeated and one on August 10th was followed by a maximum of three on September 13th and with the last single bird on the 18th. Single birds occurred at Winterset and Worsborough Reservoirs, Hoyle Mill and Nostell Dams, three at Blackmoorfoot Reservoir on August 28th and one on September 10th and two at Woodhouse Mill from September 15th to 18th, and two at Gouthwaite on August 28th. Again at Teesmouth there are few records, with single birds at South Gare on September 10th and 18th, and two on the 11th, and single birds at Coatham Marsh on the 20th and 27th. Three passed Filey Brigg on August 26th (E.J.W.).

217/218. Common and Arctic Terns (469/470).—First appeared on April 9th, a 'commic' at Spurn and at Winterset, one Common (J.S.A., D.S.). At Fairburn Ings one on April 10th, one of each on April 16th and two on several days from May 13th to June 6th. As usual spring passage at Spurn was only small with *c.* 60 birds involved and inland although recorded from several waters, the maximum was seven at Winterset on May 17th (J.S.A.). July 22nd-24th was a period of activity at Spurn and on the 23rd, 553 terns 'the vast majority probably arctic terns' passed north. Such a large number was not seen again in one day; but there was considerable movement on August 17th (230) and 29th (321). Seven on October 11th were the last except for one 'commic' on November 2nd. Again inland waters only recorded single or small numbers during July, August and September with a maximum of eight at Winterset on July 26th (J.S.A.), two identified as 'Commons' were there on October 1st and 2nd (R.P.S., D.S.) with one at Woodhouse Mill on the latter date (R.G.H.).

219. Roseate Tern (468).—One rested at the Point at Spurn with some 'Commons' on July 17th and was seen in flight with an Arctic Tern when the slim shape, longer tail streamers, black bill etc. were noted. It had a white forehead and small darker areas on the closed wings and was therefore thought to be a bird of 1959. The species was also seen on July 20th and August 5th. Inland at Fairburn one on May 13th, two on May 21st, seen by several observers and one on May 24th.

222. Little Tern (471).—The first appeared at Spurn on April 24th, the same day that three flew north off Hornsea (G.R.B.). Fifty-eight seen flying north at Spurn on May 7th and may have included some local birds. *Circa* 20 was the average number recorded during the breeding season which would not include sitting birds. Eggs were produced. P. J. Mountford and others found most visitors ready to be co-operative. That the several flying young seen had been reared at Spurn is possible. The area was only watched from a distance by most of us; a condition, however, that was not observed by everyone. Up to 30 were recorded in July, a few on some days in August to the 31st (1) and two and three passed on September 15th and 16th. Elsewhere than Spurn birds occurred on May 8th, two at Patrington Haven (A.D.B.), 13 at Holmpton (B.S.P.), one at South Fields Reservoir (R.J.R.); and single birds off Hornsea on May 28th and September 18th (G.R.B.).

223. Sandwich Tern (467).—One on April 9th at Spurn was the first. No large numbers passed in spring but *c.* 250 on July 31st and August 24th were maxima, although the species was thoroughly in evidence throughout August to late September; the last on October 10th (2). Small numbers were seen elsewhere along the coast from April 11th onwards through May, two at Patrington Haven on June 28th (H.O.B.), with August peaks of 439 north off Hornsea on August 13th (G.R.B.), the same date that 166 were seen off Filey Brigg (R.H.A.). Late birds, at Filey Brigg,

one October 1st, ten October 8th (R.H.A.), and at Hornsea, one October 9th, one October 13th (G.R.B.). Inland two occurred at Fairburn on August 27th and three large terns flying west over Langton-on-Swale on July 16th were probably Sandwich (R.C.).

224, 227, 230. Razorbill, Guillemot, Puffin (496/99/503).—These species are often indistinguishable on the sea or even on the estuary and are often lumped as 'auks' in the Spurn log. Occurrences were normal, mostly of few birds with occasional larger numbers—33 June 11th, 60 July 11th and 23rd, 43 September 26th, *c.* 400 October 10th when 331 unidentified auks passed south in two hours. Razorbills were identified rather more frequently than Guillemots or Puffins. The season proved to be a normal one on the Bempton Cliffs.

226. Little Auk (502).—In the early months single birds on the boating lake at Redcar on January 1st; at South Gare on January 23rd (P.H., M.P.), three at Hornsea on January 9th and two on March 20th (G.R.B.). In the autumn at Spurn, one on October 30th; two, eight and two on November 6th, 7th and 27th and one on December 10th; on November 6th, one at Hornsea (G.R.B.), and two at Bridlington (K.H.); and one picked up alive in Hull on November 8th (per R.S.P.C.A.).

232. Stock Dove (381).—Occurred on many days at Spurn in small numbers but on the mornings of February 29th to March 2nd, small parties followed each other southwards at intervals to totals of 43, 60 and 28, after only twos and threes, often with wide periods without any, until one on October 1st. There were no more until three on December 26th and 30 on the 27th. A flock of *c.* 150 was seen at Lindley in January and early February (B.S.).

234. Wood Pigeon (380).—Occurred at intervals at Spurn becoming more regular from the end of March; 88 on April 4th, 63 on April 9th, *c.* 90 on the 15th and *c.* 70 on May 7th, almost all passed south; few until June 18th (151) and 19th (85). From mid-July to November were few and on occasional days only. On November 3rd a huge flock of *c.* 1,200 was seen heading southward high over the Humber side at 08.10 hours. Flight lines to the north-east at dusk over Eccup were the features of December—1,000+ on 17th, *c.* 1,200 on 31st; but larger numbers came to the Hornsea Woods and were counted on December 3rd and 4th when G. R. Bennett estimated between 23 and 25 thousand, with hundreds still arriving at dusk. Flocks of smaller numbers were seen at Bretton Park, Almholme, South Fields, Chevet, Winterset, Hatfield Moor and Wade Wood, some in spring, some in autumn, with 550/600 over Winterset on December 24th as maximum. At Redcar small numbers were seen coasting north-west during April and early May (D.R.S.).

235. Turtle Dove (383).—First seen near Hornsea on April 22nd (G.B.) with two at Stanghow on April 30th (M.A.) the only others for that month. First occurred at Spurn on May 4th and up to six appeared on many days to June 11th, on which day, and the two following, the figures were 15, 12, 30. Of the 30 on June 13th, 21 flew south down the peninsula and six were near the Beacon area; four were ringed. Only odd birds appeared in the autumn. A strong movement to the east at Denaby Ings early on August 21st, with several parties in view together, up to six birds in some (R.J.R.). Fifty-four together were seen near Driffield on July 17th (G.B.), and the last one at Fairburn on October 2nd.

236. Collared Dove.—At Spurn occurred on May 9th and on seven more days to May 28th, one on July 24th and one on September 7th, 8th and 12th. Elsewhere occurred at two localities in the south-east and one in the north-east of the county. At one three adults, probably a pair and another bird, were seen frequently from July 4th to the year end and it is now known one was seen there on October 7th, 1959. A pair with two juveniles on December 5th suggests a late brood. At the second site three birds were present in 1960, at least to September, but apparently not breeding and it is now known that the species first turned up in 1958, and in 1959 a pair reared two broods. In the north-east a pair, present with two other birds since early spring, successfully reared one young.

237. Cuckoo (240).—First, at Sawley on April 16th (J.W., and Mrs. Heddon); April 17th, one at Staithes (W.K.R.) and Sprotborough (J.B.H., A.E.H.); April 19th, Masham (E.E.J.); and April 21st Ampleforth (J.P.U.) and Harrogate (S.J.); after generally distributed. The species was thought to be less common around Halifax (A.D.W.) and Pontefract (J.D.P.), but about Doncaster was back to normal after a fall-off three years ago (R.J.R.). At Spurn one appeared on April 25th and up to five until June. Passage south was daily from mid-July with as many as eight on the 30th and seven on August 7th and 9th, the last on September 8th. A young bird

was at Sleights on September 24th (T.W.A.W.), and one was seen at Atwick on October 2nd (G.R.B.). See Ringing Appendix.

241. Barn Owl (254).—One was hunting over the edge of Ilton Moor in broad daylight and bright sunshine over snow on January 15th (P.Y.). At Spurn two young were ringed in a local barn.

246. Little Owl (249).—One appeared at Spurn on April 6th, on September 12th and on a number of days to December (two on October 6th and 18th).

247. Tawny Owl (253).—Was recorded at Spurn on April 17th in the Warren and on May 29th and June 1st at the Point. An albino found on a nest near Millthrop (Sedbergh) had a few brown feathers on the facial discs, a slight rufus tinge on the crown and wing coverts, and faint buff bars on the primaries and secondaries, otherwise it was pure white (Sedbergh S.S.).

248. Long-eared Owl (250).—Three were seen at Danes' Dyke, Flamborough, on January 31st (A.J.Ws.). Up to four birds were in Haw Park between February 20th and March 26th (J.S.A., *et al.*), and a pair was present in a wood west of Sheffield but with no proof of breeding (R.G.H.). At Spurn recorded on April 5th at the Point (two owls on April 4th were not indentified and probably this was one of them); again on October 15th.

249. Short-eared Owl (251).—Single or up to two birds were recorded from many parts of the county and including every month except February. Breeding was successful in two localities with possible nesting in two others. Several birds together were seen at Broomfleet Island, five on October 29th (B.S.P.); eight or nine together at South Cliff Common on October 30th (E.B.B.); three at Almholme on November 10th (W.G.D.). At Spurn occurred singly on seven days in March and April on July 25th and on 29 days from August 10th to November 9th. In addition on nine days owls unidentified might have been of this or the preceding species.

252. Nightjar (227).—The species nested in the Masham area (E.E.J., R.C.) and at least three pairs were present at Sandall Beat, one pair rearing two young which were last seen on August 25th (C.J.B., R.M.). Birds heard calling in the usual areas around Scarborough (A.J.W.) but nesting not proved. A bird was picked up exhausted near Cowlam on June 4th (I.C.L.); and a bird at the Point at Spurn on July 9th was without white tips to tail feathers—female or juvenile? One at Lindholme on September 1st was probably the dead juvenile found there on September 6th (A.A.). One was heard singing briefly on September 13th at Gouthwaite (M.R.S., *et al.*).

255. Swift (225).—The earliest arrived at Harrogate S.F. (W.C.W., A.F.G.W.) and on Rombalds Moor (L.M.) on April 25th. The next day had increased in numbers at Harrogate and arrived at Gouthwaite, several places around Otley, Esholt, Haxell, Doncaster, Winterset and Fairburn. By the 27th had reached Hull, Hornsea, Marley S.F., Scaling Dam and Masham. Thereafter the species spread rapidly over the whole county. At Fairburn after 20 on April 26th and 30 on April 28th, numbers rose to *c.* 100 on May 10th, stayed fairly constant with up to 300 and 400 during June and rose to 700 on July 13th, 900 on July 17th, 1,000 on July 19th with a peak of 10,000 on July 29th, followed by a rapid decrease. How these birds left the county is not shown by the records and the puzzle expressed last year is in no way elucidated by 1960 records. G. R. Bennett began recording swifts moving south at Hornsea on May 8th when 120 passed, followed by 570 on the 17th and numbers as high as *c.* 1,200 on June 11th and 27th, while at Spurn the first appeared on May 4th and almost daily in small numbers to June 6th when numbers passing were estimated at *c.* 600 and at *c.* 400 on the 7th moving northwards. Passage continued small but 392 were counted on the 18th when passage became slight again. *Circa* 200 on July 4th, swelled to 2,350 on the 5th, and the rush continued on the 6th with 1,120 estimated, and fell away on the 7th. On the 8th the wind had gone north-east (from west to south-west) and only two birds passed; but *c.* 800 passed on the 9th when the wind again changed. This period of early July at Spurn showed by far the largest Swift passage of the year; but *c.* 1,200 passed on the 18th after which the movement gradually petered out with few parties or odd birds until September 19th and one on the 25th and two on October 4th.

At Hornsea there was perhaps a gap in the recording for after 770 on July 9th no further counts are recorded until 1,300 on August 6th, 1,700 the next day, dropping to 450 on August 11th, 230 on August 14th and down to 30 by August 20th. When 200 were passing south at Spurn on July 4th, nearly 300 had passed north the previous day at Hornsea, the same day that several passed north at Flamborough (H.O.B.).

In the north of the county, D. R. Seaward records a heavy north-west movement on July 16th at Redcar. September records were fairly numerous and a late bird occurred at Worsborough reservoir on October 9th (T.M.C.). See Ringing Appendix.

256. Alpine Swift (224).—One was seen on June 4th at Eccup Reservoir by E. C. Stern and G. Reynolds who submitted a detailed description having seen the bird in a very good light which showed up the white belly and throat.

258. Kingfisher (234).—Very few have been reported. The Warden of Ingleton Youth Hostel told E. C. Stern that one comes in winter to feed from fat hung in a tree, not alighting but fluttering like a hummingbird before the food.

261. Hoopoe (232).—Mrs. H. Walker writing to the Yorkshire Post refers to one seen from the train in the Levisham Valley on April 26th; coming from Southern Rhodesia the writer knows the bird well. One was found shot on Fixby golf course on May 3rd (C.D., E.C.J.S.). One gave excellent views in the Point area at Spurn on May 13th; and one on the 15th in the wire dump area; B. Richards recorded two in the lighthouse area on the 14th. One seen at Hornsea Mere on June 4th (G.R.B.). G. R. Bell writes that one at Grosmont near Whitby on May 14th was one of several reported near the Teesmouth area in that month.

262. Green Woodpecker (235).—One flew south along the narrow neck at Spurn on April 15th at 08.00 hours; it had been seen passing through the Warren.

263. Great-Spotted Woodpecker (236/7).—Young in the nest with two other pairs in the area were recorded near Sedbergh on June 6th (Sedbergh S.S.). A single bird was seen at Stocks Reservoir on April 20th (J.H.I.L.) and at Harrogate S.F. on April 15th and 16th, a female seen feeding beside a filter bed. One at Redcar on October 17th was the first record for that area and almost certainly an immigrant (D.R.S.). A bird flew south over the sea at Atwick on October 21st (G.R.B.).

264. Lesser Spotted Woodpecker (238).—Recorded from eight localities in the southern part of the county and breeding is recorded from Ripley, two adults being watched feeding young on June 5th (M.R.S.), and in the Masham area (R.C., E.E.J.). Often reported at Harewood Park with four in one tree on September 5th (E.C.S.), and returned to Raincliffe Woods near Scarborough but breeding was not proved (M.H.N., R.H.A.). A male in Hornby Park on November 4th (G.R.P.).

265. Wryneck (239).—Apart from Spurn the only records are one at Eccup Reservoir on August 31st and on September 2nd, 3rd and 5th; and one at Cloughton from October 5th to 9th (R.S.P.). At Spurn, occurred on May 10th; two on September 25th and one on the 26th, 28th and 29th. This was a delay of four weeks in the usual time of passage of this species in autumn. Two were ringed.

271. Woodlark (69).—One occurred in the Point area at Spurn on May 28th and one on October 1st and 2nd both on the 'parade ground.' The only other record is a bird singing in an area of small birches near Gate Helmsley (A.D.B.).

272. Skylark (70).—The comparison between movements at Spurn and Redcar reported in 1959 can be repeated in 1960. At Spurn, where the species was always present, passage occurred from February 27th to March 5th (325 on February 28th); and from April 3rd to 10th (c. 200 on April 4th). The autumn passage began on September 10th (c. 180). September 19th was a peak day with c. 1,320; with further peaks on October 5th (c. 1,450), October 8th (c. 1,000), October 23rd (c. 2,000), 28th (c. 3,500); by November 18th passage had almost ceased.

At Redcar a north-west movement was noted on February 22nd, 28th and 29th, March 2nd and 5th, and again on the 20th and 22nd. A few birds flew south-east on March 24th and in early April. In autumn a small increase on September 10th and a large influx about September 19th, followed by a south-east movement on October 2nd. Further influxes during the next few days and north-west coasting on October 13th, 16th and 17th. During October showed a tendency to feed on the beach down to low tide mark (D.R.S.). Inland c. 90 in early January at Fairburn Ings, and 70+ in a flock at Carleton, near Leeds, on January 7th (D.B.I.). One hundred and twenty flew north-west on January 23rd at Fairburn and 122 south-west on February 22nd. On March 2nd c. 70 flew south-east at Bewerley (A.S.), and on March 6th 75 to 100 birds at Rawdon were obviously not local breeders (R.F.D.). The same day birds returned to Middlesmoor (D.S.). In autumn c. 150 at Fairburn Ings on October 2nd.

273. Shorelark (72).—A few at Spurn in the early months—six on January 1st; three or four on five days in February; and in autumn from October 13th (3) on many days to the year end, 15 on December 3rd being the maximum. Inland a bird occurred at Fairburn Ings on January 1st (C.W.) (see *The Naturalist*, 1960, page 88);

and other records are one at Atwick on January 23rd (G.R.B.); and three at South Gare on February 15th (J.S.M., G.P.).

274. Swallow (220).—One March record, a bird at Hull on the 27th seen by C. E. King. Two at Fairburn on April 1st, one near Masham the same day (E.E.J.); one at Hornsea on April 2nd (B.R.), and one at South Gare on April 3rd. The first came to Spurn on April 4th where the spring passage continued to June 2nd, but no records in V.C. 63 until single birds at Denaby Ings (R.J.R.) and Brockholes (A.N.S.) on April 8th. The first record of double figures was at Hornsea with 60 on April 17th (G.R.B.). At Spurn May 14th with *c.* 2,000 passing, was peak day of spring passage, with *c.* 500 the next day. At Redcar May 14th was about the last day of the spring passage and peak numbers passed on May 2nd and 4th, having been continuous from April 22nd (D.R.S.).

Numbers first rose above those of the local breeders at Spurn on July 30th (160), passage birds fluctuating afterwards with occasional days with none. August 20th showed a peak of *c.* 2,450 and *c.* 1,350 passing on the 23rd. Numbers rose again to 1,678 on the 29th and again to 3,900 on September 3rd, 2,881 on the 9th, *c.* 4,100 on the 10th and 3,740 on the 11th. Thereafter numbers fell to the end of September but a few passed daily in October (*c.* 160 on the 9th). Comparative figures for Hornsea 400 June 27th, *c.* 700 August 6th, *c.* 1,000 August 7th, *c.* 1,500 August 14th, *c.* 3,100 August 20th, *c.* 4,000 August 26th, *c.* 9,000 September 3rd, and *c.* 1,200 at Atwick on September 10th, with *c.* 1,300 on September 11th, dropping to 210 on September 18th, 104 on September 19th and 130 on September 22nd (G.R.B.).

On the peak day, when *c.* 9,000 passed Hornsea, A. F. G. Walker recorded *c.* 250 per hour passing south at Flamborough.

At Fairburn Ings the fantastic estimate of 15,000 birds recorded in 1959 was greatly exceeded. Was the following more accurate counting with more observation, or more birds present? The log records 20 to 30 per day in July until the 29th when 120, then 200 on 30th and 31st. By mid-August 8,000 to 10,000 increased to 50,000 by the month end. Numbers increased even more and remained very high all September reaching the incredible peak of 700,000 on September 11th. The Nature Reserve Management Committee sanctioned ringing at this roost and 2,373 birds were ringed.

No other roost compares but a reed bed at Sprotborough Flash had *c.* 2,000 on August 27th, with 'many thousands' present the next evening (R.J.R., J.B.H., A.E.H.).

Late November birds include one at Hornsea (G.R.B.), and Ripley (M.W.) on November 13th; one at Spurn on 16th; two at Hessele on 18th (W.B.S.); one at Staithes on 21st (H.P.K.R.); with two at Hornsea on December 4th (G.R.B.). Young birds were still flying at Monk Fryston on November 15th (E.W.T.). See Ringing Appendix.

276. House-Martin (222).—The first was at Harrogate S.F. on April 8th (M.R.S., A.F.G.W.), followed by single birds on April 10th at Spurn, Hornsea Mere and Winterset Reservoir. Then a gap until the 16th when two more were at Winterset, one at Bretton Park, two at Masham. Thereafter the birds came in slowly during the remainder of the month. At Spurn May 14th was the peak day of spring with *c.* 200 passing, *c.* 100 passed on May 27th, and small numbers were passing up to June 19th. There was a small move south, with Swallows at Flamborough on May 15th (H.O.B.), and 120 were recorded at Hornsea Mere on May 17th (G.R.B.). A few coasted north-west with Swallows at Redcar with a peak on May 3rd and in the autumn there was again a thin passage on September 3rd and 11th, again north-west (D.R.S.). At Spurn September 9th was the peak day of autumn with 258 and a few continued to pass up to October 31st and a belated one on November 16th. Other late records include a nest still containing young at Ryhill on October 8th (R.P.S.); 48 flew north in a flock, harried by a Merlin, over Thornton Moor Reservoir on October 4th (D.A.S.), 17 over Winterset Reservoir on October 16th (R.P.S., R.P.); one at Hornsea Mere on October 19th (G.R.B.) and nine at Cottingham on October 30th (A.D.B.). November records, Huby on November 16th (H.L.S.), and one on November 25th at Malham Tarn (B.W.) with two reported near the Grand Hotel, Scarborough, on November 28th. See Ringing Appendix.

277. Sand-Martin (223).—Only two March records. Two at Hornsea Mere on the 27th (G.R.B.), and two at Masham on 29th (E.E.J.). During the first ten days of April recorded at Worsborough Reservoir, Sutton-in-Craven, Blaxton, Walton Hall, Winterset Reservoir (nine on the 9th) Finningley (eight on the 9th) Swinton, Fairburn and near Masham, with Spurn recording the first two on April 10th, the

next arriving on May 1st. Although only two passed Spurn on April 10th, G. R. Bennett recorded 38 at Hornsea on April 9th and 113 the next day with 810 on May 7th, some days earlier than the spring peaks at Spurn on May 14th and 27th (*c.* 50 on each day). Again at Spurn, 149 passed on July 9th, the autumn peak was *c.* 500 on August 26th, and after blank days from September 24th single birds appeared on October 3rd and 29th. Farther north *c.* 2,300 were at Hornsea Mere on August 11th *c.* 3,000 on August 14th and *c.* 2,300 on September 3rd (G.R.B.) but at Redcar very few in the autumn (D.R.S.). On July 24th *c.* 200 were at Swillington, and a single bird was seen there on October 16th. (A.H.B.L.).

At Fairburn Ings the picture for the year was as follows: two on April 1st, 14 on April 2nd, peak passage April 24th to 28th with 100 to 120 birds, 200 on June 4th, 500 on July 5th, increasing to 2,000 a few days later. Six thousand plus on July 27th numbers increasing in late August to a maximum of 70,000 on the 28th. In September numbers remained high to the last week, 300,000 on the 11th being the maximum. Twelve on October 9th and one on the 15th were the last. See Ringing Appendix.

279. Raven (1).—The species bred in at least one area in the north-west (R.C.) but in other areas no breeding records were received. Other records include two near Leighton Reservoir on January 10th (E.E.J.), single birds in Nidderdale in January, April and August (A.F.G.W., *et al.*), and a party of 11 attacking a kestrel above Semerwater on August 8th (A.P.B.). At Spurn C. Winn and L. Parkin had good views of two ravens on October 8th with carrion crows present.

280-283. Corvidae.—The first hooded crow appeared on September 24th at Spurn. From October 16th hoodies appeared in numbers regularly and the following table covers the four migrant crows in their peak periods of spring and autumn.

1960

SPRING

AUTUMN

	SPRING					AUTUMN					
	Feb. 27	Feb. 28	March 1	March 2	April 27	April 4	October 23	October 28	November 3	November 5	November 6
Carrion Crow	20	6	3	—	2	10	2	25	10	90	6
Hooded Crow	2	—	—	—	9	<i>c.</i> 20	2	36	35	330	200
Rook	10	80	159	10	44	<i>c.</i> 100	<i>c.</i> 100	<i>c.</i> 50	20	30	2
Jackdaw	2	19	28	13	5	<i>c.</i> 90	6	21	12	3	1
Corvus Sp.	30	34	—	35	20	—	2	<i>c.</i> 100	40	164	—

It will be noted that many crows passed unidentified. If they pass very far out or fly too high this is unavoidable. The hooded crows of November 5th passed southwards throughout the morning until *c.* 12.15 p.m. One party included 60 birds and another 51 birds. An exactly similar day has not been recorded before. Some birds came off the sea from the east on the 6th, the majority of all the crows passed south.

280. Carrion Crow (3).—A flock of 14 were at Adwick-le-Street S.F. on March 5th (R.J.R.) and a party of eight circled over the headland at Flamborough before moving off south-west on April 15th (H.O.B.). See Ringing Appendix and Spurn table above.

281. Hooded Crow (2).—In the spring from one to four birds were recorded from a large number of widely separated localities, including Bentley, Cherry Cob, Filey Brigg, Flamborough, Winestead, Eccup, Ilton, Redcar, Stanghow and Teesmouth, where ten on the rubbish tip on February 6th was a maximum for the spring. Birds were seen at Redcar on May 3rd (D.R.S.), and Flamborough on May 6th (D.A.S., J.R.C.).

In the autumn, larger numbers occurred along the coast, but very few were recorded inland. One at Atwick on October 16th (G.R.B.) was the first of many records, with the largest flocks Flamborough, 21 on October 29th (A.F.G.W.); Filey Brigg, 32 on October 29th with 55 on November 12th and 60 on December 3rd (R.H.A.); Whitby Moors, 12 on October 30th (A.J.W.); Stanghow, 35 on November 13th and *c.* 14 on December 2nd and 4th (M.A.); Lockwood Beck, 45 in a mixed flock of Corvidae and Greater-black Backed Gulls on December 25th. See also the table above for Spurn records.

282. Rook (4).—J. Lord writes that the increase in rooks' nests noted during the last three years at Houslyke, Nr. Danby continues; two new rookeries have been established with no decrease in the nearest long established rookery. Probably the

result of increased cultivation in the dales and an increase in arable land. At Redcar, a spring south-east movement occurred on March 20th (4), March 22nd (3), April 4th (5), April 12th (2), usually in company with Jackdaws (D.R.S.). During the last week of March three rooks were caught by Ackworth School N.H. Society and all were partly paralysed—legs unable to grip—and all died. A Government laboratory report suggested Dieldrin poisoning from seed or crop dressing. Five eggs were found in one nest at Ackworth on March 25th.

283. Jackdaw (5).—The numbers of Jackdaws moving south-east with rooks at Redcar reported above were March 20th (2), March 22nd (4), March 24th (2), April 4th (11), and seven were seen coasting north-west at the same place on October 17th (D.R.S.). See Ringing Appendix.

284. Magpie (7).—On July 23rd at Horsforth magpies were seen to take young pigeons from the nest (P.B.). Flocks of *c.* 30 were recorded at Ardsley Reservoir on November 6th (K.H.) and at Kildwick Ings on November 13th (E.Gr.).

286. Jay (11).—Four in a suburban cemetery at Hull on September 27th is a quite remarkable event (D.T.B.).

288. Great-Tit (98).—At Spurn present on most days to early May in small numbers, except on March 24th, when *c.* 40 arrived in several parties, of which the largest (*c.* 22) appeared from the south near the Narrow Neck and drifted in the Warren direction. Remained in evidence for a fortnight (17 on April 3rd), then became occasional and none were seen from May 7th to July 21st; thence to the year end occurrences of up to two or three were occasional. J. B. and A. E. Hague record a notable decrease in Scaba Wood, Sprotborough, with only two nests, one of which was eventually deserted. On March 26th, six occurred at South Gare, Teesmouth (M.P., P.H.)—query migrants or just wanderers. See Ringing Appendix.

289. Blue-Tit (100).—At Thornaby-on-Tees a bird caught was known by ringing to be four years old, but one trapped at Ackworth had been ringed in 1951. Two were seen in the centre of Leeds on October 26th (J.C.) and on October 20th, a marked influx took place in Malham Tarn Woods, where the species continued common to the 25th (P.F.H.). D. R. Seaward again recorded a probable passage in spring on March 26th and 27th and in the autumn on September 17th and 18th and October 16th, 19th, and 21st. At Spurn *c.* 30 occurred on March 24th; 11 on June 19th; 20 on September 23rd; otherwise numbers were very small but regular in August to October. See Ringing Appendix.

290. Coal-Tit (102).—Two passed south at Spurn on April 15th. Single birds were seen on May 15th and 16th and on September 11th and 12th. See Ringing Appendix.

292. Marsh-Tit (107).—One occurred at Spurn on September 18th and 19th. M. H. Ness, during photographic work in Raincliffe Woods, Scarborough, records a maximum of 20 birds seen at once between January and March.

293. Willow-Tit (108).—Single birds were recorded at Spurn on July 1st, 13th and 31st. At Redcar one in the fox covert from July to October is the only Willow-Tit for miles around (D.R.S.). At Denby Dale the species was seen occasionally all through the summer months, sometimes two together but no sign of breeding. Single birds also seen in October, November and December (P.G.R.B.). Present all the year at Scaba Wood, Sprotborough where a pair laid six eggs in a nest box but deserted (J.B.H., A.E.H.). Two at Carlton, Pontefract on February 8th were the first recorded there in nine years (J.D.P.). Recorded also from eight localities in V.C. 64.

294. Long-tailed Tit (110/111).—At Spurn two on April 2nd, eight on October 13th, 10 on October 18th, one on the 20th and six on November 1st and 7th were records rather more frequent than usual. Ten were at Ossett Spa S.F. on March 20th (A.F.). Records of other unusual localities are five Cherry Cobb Sands, September 24th (A.P., R.C.A.B.); six King George Dock, Hull, October 16th (B.S.P.); two in reeds at Broomfleet Island October 29th (B.S.P.); three at Welton Water, October 31st (D.T.B.), *c.* 12 North Ferryby Foreshore, November 6th (T.J.); *c.* nine Willerby November 6th (D.A.G.) and four at Brough on November 19th (R.C.A.B.). Everywhere the species seems to have been in good number, and 18 on October 15th, 20 on October 29th at Fairburn may have been associated with passage. A flock of 20+ at Blaxton on November 20th where the species has been more numerous than usual (A.E.P., J.B.), and a flock of 22 occurred at Foster Houses north of Fishlake on December 3rd (J.B.). See Ringing Appendix.

295. Bearded Tit (112).—Four occurred in one locality on April 6th and up to five in another locality on several dates during the year.

296. Nuthatch (96).—Occurred in all the usual haunts and was more numerous than last year about Masham, some 14 nests being located (E.E.J., R.C.), and was more numerous at Ripley. Probably three pairs occurred in Harewood Park (A.H.B.L.) and the species nested in Shipley Glen (J.C.L.), and at Hackness near Scarborough (R.H.A., A.J.W.). The species was noted in Millgill Wood, Askrigg, in November, which is probably as far up Wensleydale as they go. (D.H.).

298. Tree-Creeper (93/94).—A. Pratt counted 13 birds in a very small area at Eccup Reservoir on February 24th.

299. Wren (213).—Seen regularly at Spurn up to mid-April, and singles occasionally afterwards. Recorded regularly from August 14th, numbers gradually increasing to *c.* 10 September 28th, *c.* 40 October 5th, and *c.* 20 October 6th and 13th, remaining at *c.* 10 to November 6th, with fewer afterwards, although daily.

300. Dipper (218).—H. W. Bracken found two eggs in a nest in the Glaisdale area by March 25th.

301. Mistle-Thrush (174).—Occurred at Spurn very occasionally; most frequent February 7th to April 9th (maximum five) and from October 17th to October 6th (maximum three). A flock of 23 occurred at Eccup on September 4th and 35+ on September 18th. See Ringing Appendix.

302. Fieldfare (173).—Records for the spring give a normal picture with the last occurring at Spurn with three on May 13th and with a maximum of *c.* 40 on April 6th. Between 200 and 250 flew north-east at 7 p.m. over Hornby Park on April 12th (G.R.P.) and up to 90 occurred at Eccup during April with the last there on the 29th.

Reappeared in the autumn with single birds on October 2nd at Redcar (D.R.S.); Flamborough (A.F.G.W.); Hornsea (G.R.B.); and at Spurn on October 5th followed by numbers coming in from the 12th. Later in the month a terrific influx is illustrated by records from all over the county the dates showing the steady spread southwards. D. R. Seaward saw two on October 17th but the next few days until October 23rd showed a continuous and impressive immigration such as he has not seen there previously and the flocks often continued inland flying south. On October 23rd H. O. Bunce saw a great increase at Flamborough with birds coming in high from the east all day. On the same date 200+ had reached Fairburn Ings, with 300+ on October 29th and 700 by November 6th. *Circa* 30 flew south-south-west over Harrogate on October 23rd but the species was much in evidence by the end of the month. M. Brook-Taylor reported hordes at Gouthwaite on October 30th and on November 6th. At Eccup on the 23rd a peak of 500 was reached, and November influxes took place on 2nd, 5th and 29th with *c.* 950 on the last date. *Circa* 1,000 were at Willeby on October 29th and *c.* 200 at Broomfleet Island the same day (B.S.P.), while A. E. Platt records the hedges alive with Fieldfares between Root and Lindholme on October 23rd. Some 300/400 occurred at Burnlee near Holmfirth on 5th November
Peak days of TURDIDAE in Autumn (Five species), at Spurn.

	Fieldfare	Song Thrush	Redwing	Ring Ouzel	Blackbird
Sept. 29th	—	200	150	—	3
Oct. 1st	—	60	200	2	12
„ 10th	—	20	100	3	4
„ 18th	200	20	100	—	50
„ 21st	200	10	200	—	100
„ 23rd	250	50	300	—	45
„ 24th	500	20	200	—	150
„ 25th	750	10	100	—	40
„ 27th	750	25	150	—	75
„ 28th	1,200	35	350	—	75
„ 30th	400	40	100	—	200

(A.D.W.), and at Bretton Park on November 6th many hundreds were present and large flocks came in from the north-east all morning (E.G.). There were very large numbers at Flamborough on October 30th (H.O.B.), large numbers at Welton Water on November 6th (H.O.B.) and very large numbers pouring in before sunset at South Cave the same date (H.O.B.). The similar peaks are shown for Spurn in the table.

303. Song Thrush (175/7).—A bird ringed on January 7th at Huddersfield was retrapped on February 13th and found dead on May 13th. A. Hazelwood

identified it as an adult male of the Hebridean sub-species in breeding condition (T.D.B.).

At Spurn some evidence of passage appears in late February and March. Maxima were 15 February 28th, 12 March 12th and 22nd. The first bird of the year returned to Lofthouse in Nidderdale on February 5th; at Gouthwaite ten plus by the 6th and the species had reached Middlemoor on the 9th (D.S., A.F.G.W.).

On September 7th *c.* 30 were together on a farm at Bewerly (A.S.) and there was an increase in numbers at Redcar on September 16th and 17th and again on October 23rd (D.R.S.). An influx was noted at Flamborough on September 28th and the species was numerous there on October 1st (A.J.Ws.). At Fairburn Ings 40+ were recorded October 16th and *c.* 100 occurred in King George Dock, Hull, on October 2nd (B.S.P.). The same day the species increased towards evening at Flamborough and was very numerous there on October 9th with only a few by the 16th (H.O.B.). At Ossett Spa S.F. about 20 birds on October 2nd was the beginning of an invasion which petered out at the end of November (A.F.). At Spurn the autumn passage was most numerous from September 28th to 30th but see the table above. A bird was singing almost continuously all day on July 9th near Northallerton (J.P.U.) and at Malham Tarn for the first time since 1948 one stayed and started to sing well from November 15th to December 2nd (P.F.H.). A late nest at Ossett had one egg on August 10th, three by August 12th, four on August 15th, the young birds leaving on September 8th (E.W.E.). See Ringing Appendix.

304. Redwing (178/9).—At Harrogate S.F. interesting roost movements were noted in the spring. On March 25th *c.* 320 flew north to roost after assembly and much song. On April 1st *c.* 200 flew to roost but by April 5th only 50 present in pre-roost assembly and down to less than ten by the 7th (A.F.G.W.). At Eccup 200+ on April 1st, *c.* 100 on April 4th showed a comparable decline. The last bird was seen there on April 18th. Calls of birds emigrating were heard on April 4th at Redcar (D.R.S.) and Otley (B.S.) and on April 5th over Hull (B.S.P.). At King George Dock, Hull, about 50 were present on March 5th and 20th (B.S.P.) and at Spurn the species was fairly numerous from March 21st (25) to April 9th, maximum *c.* 40 on April 2nd. The last two birds appeared on May 6th and 28th and a bird was at Flamborough on May 22nd (R.J.R.).

In the autumn the arrival of migrants follows much the same pattern as for the Fieldfare although birds arrived some days earlier in some places. At Redcar two on September 17th, three on October 1st with *c.* 100 the next day preceded a continuous and heavy immigration from October 16th to 25th when the species was definitely more numerous than usual on the coast and some flocks continued inland south (D.R.S.). First arrived at Flamborough on September 27th and was numerous there on October 1st, 2nd and 9th with very large numbers coming in from the sea on October 23rd and 30th (H.O.B., *et al.*). At Spurn the first, *c.* 20, arrived on September 21st with peaks as shown in the table. Inland the first were heard over Harrogate on September 27th (M.R.S.) with movement at night on October 7th, 14th, 16th, 19th and 20th. At Eccup Reservoir four flew west on September 28th and two were seen in the village. In October occurred in excess of 100 from the 12th onwards. At Cullingworth on October 23rd, 200/300 seen (K.H.), and at Fairburn Ings 200 on November 6th and 13th. Birds were heard over Sheffield, Pitsmoor, Quarby and Mexborough between September 28th and October 3rd. Twenty reached Denby Dale by October 13th (P.G.R.B.) and there were 500+ at Wadworth Wood, Doncaster, on October 15th, with 90 at Bretton Park the next day when a heavy passage also passed over Hangthwaite (R.J.R.); hundreds came in from north-east all morning at Bretton Park on November 6th (E.G.). About 20 at Ilton on October 14th were the first there (P.Y.) and by October 25th 350+ were roosting in rhododendrons at Hornby Castle (G.R.P.).

G. R. Bennett counted 133 dead on the beach at Hornsea on October 1st and 145 the next day when winds were very strong.

307. Ring-Ousel (182).—March records began with one at South Gare on March 3rd, the second on March 19th when three were at Marsh Gill, Ilkley; one at Burley Moor on March 20th; and one at Stanghow from March 24th to 27th when one was seen near Hawes. The first on Ilton Moors occurred on March 23rd. Along the coast one or two occurred at Spurn on four days from April 15th to May 5th; a female at Filey Brigg on May 6th (E.J.W.) with two males and a female at Flamborough the same day (D.A.S., J.R.C.), and a male at Hornsea on April 16th (K.M.S.). Occurred at its usual breeding places, but a pair seen by the river at Duncombe

Park, Helmsley, was the first for that district (C.D.M.). A male at Eccup Reservoir on May 1st was a new record for the area. In the autumn at Spurn up to three on seven days from October 1st to 14th and one on December 22nd. The species was last seen in Nidderdale on September 22nd (A.S.) and three occurred at Fairburn Ings on October 2nd. Other coastal birds, one at South Gare on October 23rd; one Filey Brigg, October 1st (R.H.A.); and one at Hull on October 1st and 2nd (B.S.P., F.D.B.).

308. Blackbird (184).—Blackbirds passed at Spurn in March to early April in more than average numbers with peaks on March 11th (30), 22nd-25th (25-30 daily), April 2nd (35), April 3rd (63), and by the 10th the movement had almost ceased. At Redcar a spring increase noted on April 3rd (D.R.S.). Very numerous on the edge of Sandall Beat, Doncaster on March 27th where a loose flock of 20 birds included 15 males (R.J.R.). A nest in late June at Wyke, near Bradford, held eight eggs, apparently five from the first clutch deserted and three laid some time later—none hatched (D.A.R.). A brood was being fed in the nest at Harrogate on August 20th; a male singing strongly on October 17th with intermittent song throughout the month (M.R.S.). In April a pure white bird was seen at Burniston for about four weeks, then disappeared (R.S.P.).

Influxes in the autumn occurred at Spurn as shown in the table above, and elsewhere along the coast at Flamborough on September 28th and October 2nd and 30th (H.O.B., A.J.Ws.). At Redcar numbers came in on October 18th, 20th and 24th. Inland influxes were noted at Eccup Reservoir at the end of September, on October 2nd, 8th and 29th, on November 5th, 19th, 20th and 27th, with 80 counted on the 29th. In December increased to a maximum of 100 on the 11th, remaining at 60/70 to month end. At Fairburn Ings 60 on October 23rd and 50/60 on November 5th and 6th, probably indicated passage birds. At Osset Spa S.F. *c.* 70 on October 2nd was the beginning of an invasion, and there was a noticeable increase in the Doncaster district from October 16th, with loose flocks of up to 20 birds scattered over fields and hedgerows at Hangthwaite. Seventy-six flew from the south-west in ones and twos between 14.50 and 16.30 hours on October 23rd to roost in a wood at Roche Abbey (R.J.R.); more numerous than usual at Hardcastle Crags on October 30th and *c.* ten in a small garden at Shelf on November 15th where normally three or four live (A.D.W.). See Ringing Appendix.

311. Wheatear (186).—Of 13 March records, only one appeared along the coast, a bird at South Gare on March 26th. A female at Drighlington on March 12th (D.A.R.) with a male near Royston on March 13th (J.S.A.) and one at Shelf on March 15th (A.D.W.) as the earliest.

First appeared at Spurn on March 26th and the spring peak came with *c.* 20 on April 17th and May 5th and 14th. The last of spring left on May 30th.

An immature was at Lissett on July 9th (L.S.) and one appeared at Spurn on July 10th, where the autumn peaks were *c.* 30 on August 26th, 31st, September 19th and 22nd and *c.* 50 on the 21st. Late birds were singles on October 22nd and November 5th. The only other large numbers seen together were 40 at Hornsea on September 18th (G.R.B.) and *c.* 60 on September 17th at Redcar (D.R.S.). Single birds occurred at Hornsea, Hull and Winterset on October 22nd and at Flamborough and Winterset Reservoir on October 23rd, with November birds at Redcar on November 13th (D.R.S.), and Topcliffe on November 24th (C. M. Rob).

317. Stonechat (198).—Apart from Spurn, recorded on 30 dates during the year, mainly in the autumn, though with some records in the first three months of the year but no records indicate any attempt at breeding. January records include a male at Stanghow on the 6th and single birds at Fairburn Ings on the 23rd and 31st. In the autumn the majority of records occurred in November and December. At Spurn up to three appeared on many days to April 9th (five on March 13th), one came on September 18th and eight on October 13th was the autumn maximum.

318. Whinchat (197).—April birds began with one at Riffa, nr. Otley on April 14th (H.M.); a male at South Gare, Teesmouth on the 20th (D.G.B.); two at Eccup on the 21st; and one at Finningley on April 24th (A.E.P., J.B.). First at Spurn on April 25th and thereafter from May 4th to 24th with maximum of ten on May 14th. Reached the breeding area on Ilton Moor by May 9th (P.Y.) and two at South Gare on May 14th were part of a small but noticeable influx of migrants which began the previous evening.

In autumn occurred at Spurn from August 12th (one on July 30th) to September 26th and singles on five days to October 9th. Counts of 24 at Atwick on August

21st (G.R.B.) and *c.* 30 at Spurn on August 28th were unusually large. In the main records were continuous throughout August and September with the only October records, two at Flamborough on October 1st (A.J.Ws.) and one at Redcar on October 2nd (D.R.S.).

320. Redstart (201).—The earliest birds were at Eccup on April 7th; two at Ripley on April 8th (M.W.); one at Spurn and two males at Hornsea on April 10th (G.R.B.); and a male at Masham on April 19th (E.E.J.). At Spurn from April 23rd to May 29th appeared on most days with eight as maximum on May 4th; and in autumn from August 16th to October 30th with peak days on September 17th (25) and 30th (*c.* 30). Counts of double figures also occurred with *c.* 35 at Filey Brigg on September 16th and *c.* 20 the next day (E.J.W.), and *c.* 45 on September 17th at Redcar with *c.* ten the next day (D.R.S.). The last bird is one at Hornsea on October 28th (J.C.H.L.). See Ringing Appendix.

321. Black Redstart (202).—All records except one, come from the East Riding with two or one appearing almost daily at Spurn from March 12th to April 20th (three on April 15th and 18th). One appeared on June 27th, 28th and July 1st. In autumn was recorded on September 28th and 29th (2), one on October 6th, four on October 16th and daily from October 20th to November 5th—maxima were 15 on October 31st and 12 on October 27th. Elsewhere in spring two at Atwick on March 20th and one on March 27th (G.R.B.) were the only records. In October at Flamborough, two on October 23rd (A.J.Ws.); at Hornsea, two on October 23rd and three on October 29th (G.R.B.); and at Filey Brigg, two on October 23rd and one on October 29th (R.H.A.). At South Gare three stayed from October 21st to 28th (D.G.B., *et al.*).

322. Nightingale (203).—Three pairs bred in South Yorkshire with a fourth pair present and two other singing birds until late June (C.J.B., D.K., R.M.).

324. Bluethroat. (205/6)—One spring record, a female at Flamborough on May 22nd (A.J.Ws., *et al.*). In the autumn occurred on September 6th and 23rd at Spurn, when both were adult males of the red-spotted race and were ringed. At South Gare six were counted on September 17th as part of the remarkable influx over that weekend.

325. Robin (207/8).—At Spurn seen on most days in January; with some evidence of return migration in early April (three on April 1st and 2nd). None seen after May 17th until August 14th. An unusually strong passage began on September 28th with 350 robins estimated for the day. Robins were numerous thence to the end of October with peaks of 250 on October 16th and 300 on the 27th. During the whole period fresh robins were being ringed, and the total ringed for the year (680) is far greater than in any other year except in 1951 when 679 were ringed. In spite of the similar numbers ringed it was not thought that the rush was so great numerically at any time as during the week beginning October 1st 1951; but the period covered was longer, as successive waves arrived. These numbers are only partly reflected in records received from farther north along the coast, beginning with eight at Filey Brigg on September 17th (E.J.W.) and with maxima at other points: Atwick, ten on September 24th, 16 on October 2nd, ten plus on October 9th, 19 on October 21st (G.R.B.); Filey Brigg, 15 on October 1st, 15 on October 22nd and 12 the next day, 18 on October 29th (R.H.A.); and at Flamborough H. O. Bunce reports quite large numbers on October 2nd, 16th and 23rd with fair numbers on October 30th. At Teesmouth the influx of birds on September 17th only brought two to the South Gare, but *c.* 25 were in the fox cover at Redcar with a further influx on October 20th (D.R.S.). At Fairburn Ings *c.* 70 on October 2nd and at Eccup influxes occurred on October 1st, 8th, 16th and 23rd. See Ringing Appendix.

327. Grasshopper-Warbler (145).—Two reeling at Askham Park on April 15th (E.W.T.) were the first, followed by one at Rockley on April 25th (C.B.). Recorded from eight West Riding, five East Riding and four North Riding localities where A. J. Wallis considers the species much commoner than usual around Scarborough. At least ten males were heard singing during the breeding season and although nesting was not proved it seems unlikely that all these birds stayed for the whole season without attracting a mate. A nest was located at Hutton Rudby (L.M.), and it was surmised that a pair might have bred at Spurn. Four were reeling near Guisborough on April 13th and one came and sang only an arm's length away from D. G. Bell and stayed thus for over an hour. In one of the intervals between its song it dozed off and on being gently touched it immediately burst into song again.

333. Reed-Warbler (149).—Appeared first at both Welton Water and Hornsea Mere on April 30th (B.S.P., G.R.B.) and reached Fairburn Ings on May 7th when 12 were present. Two were heard singing between Ledstone and Allerton-by-Water on June 2nd (R.F.D.), and two were singing at Swillington on July 3rd (A.H.B.L.). Singing birds were also reported from Cusworth, Denaby Ings, Aldwarke S.W., Lindholme Lake, Sandall Beat and Altofts. Several people remarked on a very successful breeding season at Welton Water and Hornsea, where the last were seen on September 18th (B.S.P.) and October 15th respectively (G.R.B., A.D.B.). A bird among the warren *phragmites* at Spurn diagnosed by R.G.H. and F.N.B. as 'Reed-Warbler/Marsh' on October 9th was probably this species.

337. Sedge-Warbler (153).—The first recorded reached Hornsea Mere on April 15th (G.R.B.), with one at Winterset on April 16th (J.S.A.), and at Fairburn Ings on April 22nd; appeared at Spurn on May 5th and daily into June and afterwards spasmodically, then regularly in August to September 18th. The maximum was six on August 17th and 18th. Left Hangthwaite by September 11th (R.J.R.) and was last seen at Fairburn on September 17th with a late bird at Hornsea Mere on October 9th (G.R.B.).

343. Blackcap (162).—It would seem that the one potter-trapped in Middlesbrough and reported last year, over-wintered, as a male was seen on two or three dates during February 1960 with a ring on its leg. Other birds which possibly wintered were one at Sleights, near Whitby on February 6th (C.E.A.B.), and a male at North Grimston from about January 10th to 23rd (Hon. M. Willoughby). Otherwise the first birds of spring occurred at Staithes on April 11th (W.K.R.); near Redcar (D.R.S.) and at Wadworth Woods, Doncaster on April 18th (C.J.B., P.D.); two at Walton Hall on April 19th (J.S.A.); with several other records during the last week of April. At Spurn after one on April 10th up to two occurred from May 4th on eight days in May, began to appear again on September 10th with a maximum of seven on October 2nd and the last on November 3rd but for single birds on November 24th and 27th. October birds occurred at Flamborough on the 1st and 30th (A.J.Ws., A.F.G.W.); Filey Brigg on October 15th (R.H.A.); Redcar on October 23rd (D.R.S.); a female at Bingley on November 6th (S.L., D.V.); two males at Rockley on November 27th (D.S.) and a single male at Bingley on December 4th (S.L., D.V.).

344. Barred Warbler (159).—Occurred at Spurn from August 31st on nine days, two on September 5th. Two were ringed.

346. Garden-Warbler (161).—One was in Mulgrave Woods, Sandsend on April 18th (T.W.A.W.) with the next at Harewood Park on April 21st (E.C.S.). One at Flamborough on May 7th (A.J.Ws.), and appeared at Spurn on nine days from May 6th to June 4th—three on May 22nd; and from July 30th on many days to the last on October 25th, with ten on August 26th. With the big invasion of September, six were recorded at South Gare on the 17th with two on the 18th; between five and ten at Redcar on the 17th with two plus still present the following day, the first definite record for that area in six years (D.R.S.). At Filey Brigg, six on September 16th and five on the 17th (E.J.W.), the same date that the last bird was recorded at Fairburn Ings (R.B.S.). The last is one in the fox covert at Redcar on October 2nd (D.R.S.).

347. Whitethroat (163).—A single bird near Bawtry on April 15th (R.J.R.) was the first, followed by two at Sprotborough on April 19th (J.B.H., A.E.H.). May 2nd saw the first at Spurn where the species was present continuously to September 23rd with odd birds after on seven days to the last on October 21st. At Fairburn ten which arrived on May 7th may have been associated with the large numbers seen at Bempton on the previous day. Two arrived at South Gare on September 17th with c. ten at Redcar the same day; one near Masham (E.E.J.) and one at Hangthwaite (R.J.R.) on September 18th; one at Almholme on September 25th (W.G.D.) and a bird singing at Eccup on September 27th, with the last inland, a bird at Bewley on October 7th (A.S.).

348. Lesser Whitethroat (164).—The first occurred in the Staithes area on April 27th and the species was seen and heard in several places around Staithes from then onwards (W.K.R.). One was singing at Redcar from May 6th to June 1st. (D.R.S.). Single birds at Fairburn Ings on three dates in May, and two in July. Two were singing at Worsborough Reservoir on May 28th, and were seen several times through the summer (T.M.C.) with the last record there, one on September 11th (D.S.). There were four plus at Redcar on September 17th, with only one the next

day when one also occurred at South Gare (D.R.S.). At Knaresborough S.F., J. R. Mather trapped seven juveniles between July 17th and August 11th; and nesting was proved near Sedbergh on June 29th (Sedbergh S.S.). At Spurn one seen on May 5th; with five on the 6th, and six on the 7th, and after, on four days to May 22nd. Occurred on seven days from August 26th to October 28th, and one on November 12th. Records of single birds were received from thirteen other localities. See Ringing Appendix.

354. Willow-Warbler (132).—Again the earliest record comes from Hornsea Mere with one on March 27th (G.R.B.). Birds occurred at as widely separated localities as Harrogate, Esholt, Bradford and Staithes by April 6th; Middleton Woods and Skidby, April 7th; Knaresborough S.F. and Hornby Park, April 8th; Sedbergh and Winterset by April 9th, after which the species spread through the county generally. The first at Spurn arrived on April 9th with the main spring arrivals coming on May 6th (*c.* 30) and 13th (*c.* 30). In autumn, numbers were never large and the main periods were August 9th to 12th and August 20th to September 2nd. At Fairburn autumn passage was reflected by records of 120 on July 17th, 100 on July 31st and 150 on August 1st. At Eccup peak passage started in July with 30 on the 7th, 41 on the 23rd and 50 on the 26th, but on August 7th an estimate of *c.* 400 was made in the early morning. The September weekend brought *c.* 60 to South Gare and *c.* 50 to Redcar where D. R. Seaward found all that were definitely identified to be Willow-Warblers. On September 19th the species was plentiful and singing at Ravenscar (R.S.) and the last record is a singing bird at Hornsea on October 16th (G.R.B.), except for a light brown legged *phylloscopus* which called and was seen down to 20 feet in Hornby Park on December 18th. It was paler and greyer than summer Willow-Warblers and no doubt an immigrant (G.R.P.).

355. Greenish Warbler (134).—Birds were caught at Spurn on June 4th and on September 4th and in each case carefully examined in the hand and described; and subsequently accepted by the Rarities Committee. A third *phylloscopus* with a single wing bar avoided capture on October 17th and was probably of this species.

356 Chiffchaff (129).—The first arrived 20 days earlier than the first recorded in 1959 with one at Adwick-le-Street S.W. on March 5th and 6th (R.J.R.). Thereafter birds arrived on March 12th at Esholt (D.A.S.); March 13th at Roche Abbey (J.B.H., A.E.H.); March 20th at Winterset (J.S.A.), Ossett S.F. (A.F., R.W.), Harrogate and Fairburn; March 25th Spurn; March 26th Walton Hall (J.S.A.); March 27th Coxley (A.F., E.G.) and at Hornby Park nine were singing (G.R.P.); March 30th Ogden Reservoir (C.Ws.) and Hornsea Mere (G.R.B.). After the first at Spurn, birds were recorded on 15 days to May 30th with three on April 3rd as maximum and in the autumn the main passage came from September 28th to October 3rd with a maximum of *c.* 20 on October 1st, and stragglers almost daily throughout October with one on November 14th. Another November bird occurred at Heaton Wood, Bradford on the 4th (J.C.L., D.V.), while on December 22nd at Swillington Ing A. H. B. Lee watched a warbler at leisure at five yards range and considered it to be almost certainly a chiffchaff. See Ringing Appendix.

357. Wood-Warbler (135).—Recorded at Haw Park on April 9th (2) and one on April 10th and 16th (D.S., J.S.A.); two near Masham on April 14th (E.E.J.); two in Eskdale on April 28th (A.C.) and near Ripon on April 30th (M.R.S., A.F.G.W.). At Spurn single birds were recorded on April 20th, May 17th, August 22nd and September 1st and 2nd. A bird at Hornsea on July 3rd (G.R.B.) was unexpected as it is an early date for the beginning of a southerly movement.

360. Yellow-browed Warbler (137).—One was caught at the warren trap at Spurn on September 27th and was minutely examined and described including weight and wing formula and remained in the area until the 30th. Another on October 14th near the Point was diagnosed by H. G. Brownlow from its typical movements, double wing bar, yellow eye stripe and light brown colouration. Colonel Brownlow has handled several of this species on Fair Isle. One was trapped on October 30th.

361. Pallas's Warbler (138).—On October 22nd P. H. G. Wolstenholme and J. M. Butterworth watched a small phylloscopid warbler near the narrow neck of which they took a detailed description. After consulting *The Handbook and British Birds*, volume XLVII, page 294, they consider the bird to be this species (*Phylloscopus proregulus* (Pallas)). The same observers saw the bird again at 07.15 hours on the 23rd; and it was caught in the C.B.N. trap and their sight diagnosis was fully confirmed. The 'Rarities Committee' of British Birds have agreed. Full descriptions

of plumage etc. were taken and at liberty the bird showed the distinctive yellow rump, prominent yellow superciliary and single yellow wing bar only; and no one could discern the central crown stripe nor the ring that had been placed on its leg. The double wing bar and central stripe down the crown had been visible in the hand. It was a new bird for Yorkshire, with further details being published elsewhere.

364. Goldcrest (126/7).—More than usual occurred in spring at Spurn from March 12th to April 21st, with maxima of *c.* 20 on March 26th and 28 on April 3rd. This was to be expected, following the large immigration of autumn 1959. Evidence of this spring passage was also seen at Redcar, where single birds occurred on March 24th and 28th with up to five daily from April 2nd to 6th (D.R.S.), and several occurred at Flamborough on April 6th (A.J.Ws.). A bird occurred on the Reservoir embankment at Whiteholme, 1,200 ft. above sea level, on April 1st (V.S.C.). In the autumn at Spurn passage was regular throughout October—maxima *c.* 60 on October 3rd and *c.* 50 on October 1st and 29th, and again smaller numbers were recorded at other points along the coast with 20+ on October 2nd, one on October 17th and small numbers daily from October 20th to 23rd with three on October 24th at Redcar (D.R.S.). *Circa* 20 at South Gare on October 1st and 30 on the 22nd. Between Filey Brigg and Flamborough birds were recorded on nine dates between September 17th and October 22nd with 20+ at Atwick on September 18th and 23rd (G.R.B.), *c.* 20 at Flamborough on October 1st (A.J.Ws.) and *c.* 100 on Filey Brigg on October 22nd (R.H.A.). Small parties were noted at Sandall Beat from August 14th onwards where the species is not known to breed (C.J.B., *et al.*). Evidence of movement inland occurred with one at Hangthwaite on September 18th which was the first of the autumn in an area where the species does not breed (R.J.R.) and many more than usual were seen at Hardcastle Crags on October 30th (A.D.W.). See Ringing Appendix.

365. Firecrest (128).—The first record for the West Riding since 1878 was a bird seen at Copley on March 13th by A. Frudd and R. Wilby, who had good views of the bird down to about three yards. All other records come from Spurn where one occurred from April 9th to 11th, from October 1st to 2nd and from October 20th to 25th, with two on the 21st.

366. Spotted Flycatcher (121).—Present at Denby Dale from May 6th (P.G.R.B.) the first recorded. There was quite a good passage at Spurn for this species from May 11th to 27th (maximum of 12 on the 14th); and later occurrences on June 6th, 17th and 18th. Some evidence of passage farther north on the coast occurred with up to two seen on five dates during the latter half of May at Flamborough (A.J.Ws.) and one or two at Redcar on May 23rd (D.R.S.). Recurred at Spurn on August 6th, continuing at intervals to October 13th (1)—*c.* 10 on September 17th maximum. There were two at South Gare and *c.* six at Redcar on September 17th (D.R.S.) and movement at Filey Brigg and Flamborough was noted on eight days during September and up to October 2nd with five at Filey Brigg on September 16th, three the next day (E.J.W.); three at Flamborough on September 17th with the last one on October 2nd (A.J.Ws.). The last at Fairburn Ings was seen on October 1st.

368. Pied Flycatcher (123).—The first was a single bird at Oakley on April 14th (O.M.P.), followed by a male in the Ewden Valley on April 19th, where a pair and one singing male was seen on May 15th, one male singing there all summer (D.S.). A few occurred at Spurn on nine days in May—six most on the 14th, the date one was seen at Flamborough, followed by one on May 21st and two on May 22nd (A.J.Ws.). Five pairs in Kildale by May 1st (A.C.). A pair was building near Scarborough on May 8th and four nests were found in Raincliffe Woods (M.H.N.). A pair bred at Hopton Mill, Mirfield (J.S.P.), and at Ripley, two birds were rearing five young out of 12 eggs laid (M.R.S.). Recurred at Spurn on August 18th and on most days to October 2nd with one on October 21st. Autumn maxima ten on August 31st and September 17th, the date when three occurred at South Gare and seven at Redcar (D.R.S.). On September 19th was plentiful at Ravenscar (R.S.) and about the same period was noted at Flamborough, Atwick and Filey Brigg, with ten at Flamborough on September 17th (A.J.Ws.) as maximum. The last occurred at Flamborough, three on October 2nd.

370. Red-breasted Flycatcher (125).—At Spurn a male on May 15th, another male on August 26th were all before the period September 27th to October 6th when one or two were seen daily. Also seen on October 13th and 14th. Other records are— at Filey, a male on September 16th (E.J.W.); at Flamborough a female or immature

on May 21st, September 27th and 29th and one on October 1st and 2nd (A. J. Ws., *et al*) This last bird was on plumage comparison a different bird from the one seen at the end of September.

371. Hedge-Sparrow (210/11).—Occurrences were normal at Spurn without much evidence of immigration except that the days' recorded maximum for the year of *c.* 60 occurred on October 5th. On July 25th R. Chislett caught in his garden one which had been ringed there on July 23rd, 1957 and re-caught on September 6th, 1957, August 8th, 1958, and July 15th, 1959, but never on any intervening dates.

373. Meadow-Pipit (76).—The first birds had returned to Middlesmoor by March 24th and early nests were hatching on June 1st, and early flocking took place by August 14th. A north-west movement was noted over Doncaster from mid-March to April 26th, maximum 15 in 15 minutes on April 4th, and the species was very numerous at Almolme on April 10th with parties of up to 25 birds (R.J.R.). At Spurn spring peaks were *c.* 100 on April 4th and 6th and *c.* 150 on April 7th. At Redcar under five birds present until March 20th when 190 coasted north-west in two hours, a movement which continued almost daily until April 23rd (hundreds present on April 3rd) and more movements from April 30th to May 6th (D.R.S.). Autumn passage began at Spurn from August 29th; peaks were *c.* 1,950 September 3rd, 3,517 September 9th, 4,200 on the 10th, 8,052 on the 11th, *c.* 3,000 on the 15th, *c.* 8,200 on the 19th, *c.* 1,500 on the 22nd. Passage in October was much smaller and more intermittent. At Fairburn periods of heavy passage were 300 on September 11th, 120 on the 25th, 300 on October 1st with 100 the next day, while at Eccup the species became more numerous in the latter half of September, particularly in between the 17th and 20th. At Redcar an influx of *c.* 100 on August 28th, with further increase on September 6th, and north-west movement on September 8th and 10th. On September 18th the direction of flight was south-east but returned north-west on October 13th, 16th and 17th. At Flamborough very few were present on September 3rd but a large increase overnight gave large counts on September 4th (A.F.G.W.). On September 10th, *c.* 250 were counted on the railway track between Hull and Keyingham (A.D.B., B.R.) and at Atwick, G. R. Bennett made the following counts—380 on September 10th, *c.* 2,300 on the 11th, *c.* 1,150 on the 18th, *c.* 1,760 on the 19th and 186 on the 24th. Passage to the south or south-west was noted over Sheffield from September 11th to 24th with a small number passing south-east on October 3rd (R.G.H.). See Ringing Appendix.

374. Richard's Pipit (73).—One seen by G. R. Bennett at Atwick on October 22nd.

375. Tawny Pipit (74).—At Spurn one gave good views to a number of observers on May 1st. It frequented an area of bare sand which had been produced by fire in 1959. A full description was taken and the record accepted by the 'Rarities Committee.'

376. Tree-Pipit (75).—A few passed Spurn from April 16th (1) to May 22nd (3), with seven on May 7th the highest number in a day. April 15th was the first date inland at Carleton, Leeds, with birds at Eccup Reservoir and Haw Park on the 16th; April 18th Redcar, Wadworth Woods, Doncaster and Kildale Woods; April 19th Bingley; April 22nd Leighton. Birds were recorded at Hornsea on May 7th (G.R.B.) and Millington on May 8th (H.O.B.), and five at South Gare on May 13th and 14th. Over the mid-September weekend six occurred at South Gare and *c.* 20 at Redcar on the 17th (D.R.S.). One was at Swinton, S. Yorks. on October 1st (R.J.R.) and at Eccup nine flew east on September 18th; the last bird of the year, one on October 2nd, also at Eccup. Re-appeared at Spurn from August 12th to September 27th, maximum *c.* 20 on September 19th and 21st. One occurred on October 27th and 30th.

379. Rock/Water-Pipit. (81).—Odd birds and couples occurred from January at Spurn but six on February 28th, four on February 29th were unusual; and there was more evidence of passage from April 2nd-9th. Very scarce in autumn until September 22nd, occurring after regularly; maximum 18/20 on October 8th/9th, 16 October 13th, 15 October 25th and 28th. Two at Atwick on May 8th and 14th, six on September 19th with seven at Hornsea on September 24th and six on October 2nd (G.R.B.). One occurred inland at Hangthwaite on November 6th (R.J.R.).

380. Pied/White Wagtail (90/91).—Passing birds are frequently identifiable in spring and at Spurn nine birds were seen in March and small passage continued a few days longer. Of eight birds on April 6th four were whites, and one pied. A few whites were identified on some other dates one as late as May 28th. Passage

in autumn was a little larger with 16 on September 12th, 17 on the 25th and continued into November—whites were wisely not recorded. Inland white wagtails were recorded in the spring at many places.

J. Lord found a nest on a ledge in a quarry at Houslyke, nr. Danby on August 1st in a site where, for almost 40 years, with very few breaks, a pair have built. Roosts of pied wagtails in the autumn include one at Holden Dam which increased from 29 birds on October 24th to 77 on October 28th and 157+ by November 5th (J.H.); at Knaresborough S.F. in hairy willow herb and willow estimated at *c.* 150 strong on September 9th (J.R.M.); at Denaby Ings *c.* 300 birds on August 10th (J.B.H., A.E.H.); at Sandall Beat *c.* 150 birds during August and September with *c.* 100 birds at Doncaster Carr during the same period (C.J.B., *et al.*). See Ringing Appendix.

381. Grey Wagtail (89).—Movement at Spurn records single birds on six days in March and April, and one on May 21st, while at Redcar one or two were seen on five dates in March and on April 3rd. One occurred on the shore at Sewerby on January 6th (A.J.Ws.) and at North Ferriby on February 13th (D.T.B.). Birds attracted to the open drains in Hull were last seen on February 28th and returned with the first on September 27th (B.S.P.). Autumn movement was more pronounced with up to five passing Spurn from August 31st to September 25th on 19 days; and a few, mostly singles, to November 5th on 11 days. Coasted north-west at Redcar on six dates in September, maximum nine on the 8th (D.R.S.), and single or up to two birds were recorded at various localities along the coast between September 18th and October 27th. At Fairburn Ings maxima were eight on August 29th and five on October 9th.

382. Yellow Wagtail (88).—The first occurred at Wigglesworth, near Long Preston on April 3rd, flying on to the bonnet of J. H. I. Leach's car while he was eating lunch inside. The next were two at Fairburn on April 7th, one at Knaresborough S.F. on April 8th (J.R.M.), and one at Winterset on April 9th with two the following day and four by the 16th. At Winterset maximum numbers in the autumn were *c.* 55 on August 10th, with three on September 17th (J.S.A.). In the East Riding one at Hull on April 11th (W.B.S.); two near Beverley on April 19th (D.A.G.); one at Hornsea on April 23rd (G.R.B.). One appeared at Spurn on April 22nd, the next on May 2nd and a few passed to May 8th with two on the 21st. Reached the Sedbergh area by April 22nd (H.W.B.) and was generally distributed in Nidderdale by May 3rd. Autumnal occurrences at Spurn were scarce—single birds on August 1st, 2nd, 17th, September 22nd and five on September 12th. At Fairburn Ings the main congregations were 20 on May 2nd, 70 on July 17th and then 60/70 in the latter half of August, with 100 on September 4th, 120 on September 11th with one on October 9th, the last. The late summer roost at Gouthwaite had reached 100+ by July 27th, 200+ from August 5th-10th, with five on September 17th the last. At Denaby Ings *c.* 60 rose from a reed bed on August 22nd and flew off south-west (R.J.R.). Four were at Ackworth on September 23rd (Ackworth School N.H.S.); one at Cooper Bridge S.F. on September 24th (P.G.R.B.); *c.* 10 Broomfield Island September 22nd (S.M.); one at Beverley, October 2nd (D.A.G.), and five, Denaby Ings, October 17th (J.E.H., A.E.H.), one, Beverley, October 8th (A.S.).

Four birds ringed at Gouthwaite in late summer 1959 were re-trapped in the same place in the late summer 1960 (H.N.S.). A flava-wagtail at Winterset on May 7th had a pale grey head and white eye stripe (A.F.) and two at Fairburn Ings on May 15th, showed blue heads, white throats and superciliary stripes (R.P., R.P.S.).

383. Waxwing (120).—The largest flock was *c.* 150 at Runswick Bay on January 6th (R.S.P.). Records of smaller flocks from single birds up to 12 were recorded from ten other widely spread localities in the county. Autumn records were very few, the first being at least one near Pocklington on October 23rd and 24th (C.N.); two at Scarborough on October 29th (A.J.W.); one at Sutton, near Hull on November 9th (G.R.B.), and two in Sheffield on December 31st (T.M.C.). Twenty in Albert Park, Middlesbrough on November 27th (R.A.N.) stayed into December.

384. Great Grey Shrike (114).—The almost complete lack of records for this species in 1959 was not repeated in 1960 and excluding Spurn no less than 22 birds were recorded. In the spring, one at Wauldb Green on February 14th (B.S.P.); one at Risby on February 15th and 27th (A.D.B., *et al.*); one at Thirsk on February 29th (S.P.C.J.); one near Leyburn on March 27th (G.E.A.); and one at Ramsdale Beck, Nr. Whitby on April 15th (R.H.A.). At Spurn one occurred in the Long Bank

area on March 11th; one at the Point on September 29th; and from October 14th up to two were present on 13 days to November 5th. Occurred elsewhere in the autumn from October 1st with a single bird at Flamborough, where another was seen on October 29th and 30th (A.J.Ws., A.F.G.W.); one near Barnsley on October 22nd and again on December 26th (G.A.); one at Fairburn Ings on October 15th which was seen on most days to December 4th with two on the last date; one at Redcar on October 21st (D.R.S.), and one at Boulby during early October (W.K.R.). One at Gouthwaite, first seen on November 6th, stayed to the year end (A.F.G.W., *et al*); one at Bewerley on November 23rd (A.S.); one near Ripon on November 27th (J.K.F.); one at Welton Water on October 31st (D.T.B.); one near Doncaster and one at Almholme on November 13th (H.E.S., *et al*); one Hornsea Mere on December 4th (A.D.B.), and one, possibly two, at Willerby on December 30th (D.A.G.).

385. Lesser Grey Shrike (113).—This record, although written in the daily log of events for May 12th, 1959 by J. S. Armitage and A. R. Hall was omitted from the list of species or roll call and was overlooked in consequence (R.C.). The shrike occurred in the chalk bank area at Spurn in late afternoon. It was well described, with black forehead continuing past eyes and over ear-coverts. A pale pink flush covered the breast. It flew low over the ground with slight undulations and hopped along the top of the trap. It declined to enter.

388. Red-backed Shrike (119).—Occurred at Spurn with a male on May 17th and on the 20th, held up by vile weather. One on September 17th, two on the 21st, one on the 23rd and a juvenile on the 25th were all of autumn. Elsewhere in the county a male at Atwick on September 10th (G.R.B.); a female or immature on the cliffs north of Robin Hoods Bay on September 17th (C.E.A.B.); and a female or immature at Flamborough on September 18th (M.R.S., A.F.G.W.).

389. Starling (14).—At Spurn there was a passage for a few days from February 27th (1,180 on the 28th, 2,050 on March 5th); and from April 5th with *c.* 2,000 on the 6th. At Redcar a south-east movement was noted from April 4th to 8th, where in the autumn a north-west movement on October 13th was again evident from October 16th to 22nd, with 2,000 coasting in 90 minutes on October 16th. At Spurn heavy passage in autumn did not come until October 16th when *c.* 5,000 flew south together at 4.50 p.m. On the 20th *c.* 6,000 passed. Most of the *c.* 2,000 on October 29th passed in the early morning. Generally passage was on a smaller scale than usual. Records of some roosts include 12,000 at Fairburn Ings on July 25th, with 40,000 the maximum for August, on the 26th, 120,000 in early September with 100,000 from September 22nd to October 2nd, after which the roost moved. A roost at Goldsborough in December was estimated to be about 70,000 strong (I.R.D.). See Ringing Appendix.

391. Hawfinch (18).—Definite breeding was reported from Sandall Beat (C.J.B., *et al*); Pocklington (C.N.); Ilkley (L.G.D.); Bolton Abbey (J.E.B.); Roundhay Park (E.C.S.), and Wentbridge, Nr. Pontefract (Mrs. E. Dunning). Seen during the early part of the year in Rockley Woods, Worsborough (A.A., D.S.); three at Brantingham on March 12th (D.J.M.); at Eccup Reservoir in March, April, October and November; and two at Gouthwaite on April 3rd which form new record for the Reservoir area (M.R.S.).

392. Greenfinch (19).—It could be expected that the large numbers of Greenfinches ringed at Spurn recently would bring some recoveries and recent ones are recorded in the appendix. There is not space for much comment here but it is perhaps typical that two birds ringed within six days of each other in winter should be recovered on the same April day, one in Lincolnshire, the other in Middlesbrough. At Spurn the winter flocks dispersed or reduced gradually; and numbers remained small until early October; the peak of *c.* 850 on October 28th included 752 that passed south between dawn and 09.15 hours and between 11.30 and 13.50 hours. In the first ten weeks of the year, D. B. Iles caught 131 Greenfinches in a small stackyard at Carlton, nr. Leeds; and a flock of 200+ occurred in Swillington Park on January 20th (K.D.). There were 300/400 at High Royd S.W. on February 6th (A.D.W.) and *c.* 400 at Winterset on March 5th (A.F., R.W.). A bird caught at Ackworth was partly paralysed and died and is another case of a Government laboratory report suggesting dieldrin poisoning from seed or crop dressings. See Ringing Appendix.

393. Goldfinch (20).—Some quite large charms were recorded in the early months with 19 at Ossett Spa on January 17th; 30 near Bentley on January 23rd; 15 at Winterset on March 29th and 18 on April 19th (J.S.A., *et al*). At Spurn one or

two occurred on some days up to April 30th, after which passage took place to May 8th (24 on the 7th); and again on the 22nd (32). Autumn passage was fairly continuous from October 1st, with peaks of *c.* 60 on the 28th, 38 on November 12th, 35 on November 14th; and the species continued to occur at intervals to the year end. A. F. G. Walker writes that the species appeared to benefit from the fair weather in May and June and was in good numbers in late summer and autumn, 24 was the maximum at Eccup in November. Some indication of the numbers is gained by a record of *c.* 100 over a mile stretch of common land at Bentley on August 19th (C.J.B., D.K.); a charm of *c.* 30 at Alholme on December 26th (W.G.D.); and a flock of *c.* 20 feeding on thistles on high ground at Ilton on September 26th (P.Y.).

394. Siskin (21).—1960 was clearly a siskin year and the records of small flocks are far too numerous to set out in detail. In the early months the species was present in the Shipley-Bingley area, maximum flocks of 25 at Baildon on January 6th (J.C.L., *et al*); two parties of *c.* 30 were at Hornsea Mere on January 5th (G.R.N.), and there were parties of up to 40 along the Nidd in January (D.G.L.) where up to 70 occurred in December (W.C.W.). Throughout January, February and March a flock of *c.* 60 lived in Raincliffe Woods, Scarborough (M.H.N.), while a flock of 100+ feeding on compost in Crossflats Park, Beeston, Leeds, on February 6th increased in numbers by February 21st to *c.* 300 with none seen after February 28th (K.D.). At Spurn two and one on May 13th and 14th were unusual, and nine feeding on the beach at Scarborough on February 14th was an unexpected record (R.H.A.). In the autumn passage began at Spurn on September 17th. On the 19th the early morning watch, with much larger numbers of hirundines, skylarks and pipits, recorded 167 siskins passing south. On the 21st and 22nd figures in the column read 244 and 140 but such numbers were not seen again and the movement petered out completely with one on November 1st. At Redcar there were *c.* 30 in the fox covert on September 17th, dropping to nine plus the next day (D.R.S.). Smaller parties were recorded at Flamborough, with 11 on October 1st, 12 at Hull on October 2nd, 12 at Filey on October 29th and ten at Hornsea Mere on December 4th. Thirteen at Fairburn Ings on October 17th and three on November 13th may have been on passage also. Near Masham the last were seen on April 14th and *c.* 20 on October 16th were the first of the autumn (E.E.J.), and a flock of *c.* 100 was seen in a gill below Ilton Moors on December 14th (P.Y.). A pair feeding on the ground at Malham Tarn on June 6th is an unusual date (P.F.H.).

395. Linnet (30).—Peaks of this species occurred at Spurn from February 27th to March 2nd (*c.* 190); 320 on April 9th and 286 on the 10th; 801 were counted flying south on April 15th and 336 passerines unidentified were also probably mostly linnets; a period of plentitude of linnets passing ended with 181 on May 8th. By that date some local linnets were nesting and large numbers did not appear again until September 11th. Autumn peaks were *c.* 400 on September 19th; *c.* 1,200 on October 5th; *c.* 450 on October 28th and *c.* 300 on November 25th and December 31st. To separate flocks jaunting to feeding areas from distant migrants is impossible under such conditions and D. R. Seaward at Redcar, who noted some north-west passage around April 15th and 16th, also found it difficult to disentangle these from local movements.

The first had returned to the Harrogate area on March 27th but was not recorded at the head of Nidderdale until April 18th (D.S., A.F.G.W.). At Eccup *c.* 200 on August 30th was the maximum and the species decreased very noticeably in November. See Ringing Appendix.

396. Twite (28/29).—Single birds in Crummockdale on March 6th (K.H.); on Ilkley Moor, June 25th (J.C.P.); near Stanbury, June 29th (J.E.B.), the date when a male and some young were seen at Pondon Clough. Also recorded in summer from Coldedge Moor, Keighley Moor and Meltham Moor (A.D.W., *et al*) and five at Harden Moor, Bingley on August 17th is a new locality for the area (J.C.L.). The Sedbergh S.S. report a small community of about three pairs with one nest found. At Spurn a few passed on eight days in October to November. On November 8th, of *c.* 30 finches passing north together two called as twite. If all were of the same species (as they appeared) they easily formed the peak of the movement.

397. Redpoll (23/25).—The comment that large flocks appeared to be few and far between applies to the whole county. The maxima at Gouthwaite were *c.* 60 on November 19th and *c.* 100 on December 17th. At Eccup maximum was 50 on November 19th and 20th and only a few occurred at Fairburn in the autumn with a maximum of 13 on October 23rd. Elsewhere flocks of *c.* 40 at Ossett Spa on March

12th and *c.* 50 at Cragg Vale, nr. Halifax on November 7th are the largest recorded. At Spurn occurred on three days to April 30th then on ten days in May with three as maximum; and not again until one on August 26th. A few passed on 30 days in autumn, with 12 on September 24th and October 28th as maxima. Ten flew south on November 14th, eight on the 15th and no more were seen.

401. Bullfinch (32/3).—Numbers of this species appear to be still on the increase, as is evidenced by 'more birds seen than ever before in the Bessacarr area, Nr. Doncaster' (H.E.S.). The species continues very common in the Harrogate area; a flock of 16 were seen at Bramhope on October 16th (J.R.G.); 12 in Scaba Wood on November 6th (J.B.H., A.E.H.); 25 at Sandall Beat on December 4th (including one flock of 15 males) (C.J.B., D.K.); 12 at Bessacarr on December 3rd (H.E.S.). A pair was seen near Ogden Reservoir at 1,000 ft. level on May 25th (C.W.). At Spurn was recorded in the Warren bushes on July 8th and a male flew south on November 15th. Were much more plentiful at Duncombe Park during first few months, 15 together on January 31st, where normally very few are seen (C.D.M.).

402. Scarlet Grossbeak (34).—A first winter bird, probably female, was caught at Spurn on October 1st; and was examined, measured, described in detail, ringed and released. The record has been accepted by the Rare Birds Committee.

404. Crossbill (36).—The large numbers seen in 1959 were not repeated in 1960. In spring *c.* 20 were in the Masham area on January 23rd (P.Y.); up to ten occurred at Ilkley from January until March (O.M.P.), and *c.* ten at Stanghow on May 30th (M.A.). Otherwise all records are for single or pairs of birds—at Eccup one on May 15th, seven on June 1st, one on July 1st; in Upper Nidderdale song heard on January 3rd and a pair in another locality the same day (D.S., I. & S.D.); two flew overhead at Buckton on August 6th, either females or birds of the year (D.A.R.); one at Atwick on September 24th (G.R.B.); and one at Rievaulx on November 13th (D.S.S.), with Spurn recording one on June 18th and July 30th and two on August 2nd. There were no definite records of breeding.

407. Chaffinch (40/41).—At Spurn the big spring passage of Chaffinches began on April 2nd at 05.30 hours and continued until 09.00 hours to the number of *c.* 1,200. All flew low and many were tired and came down, and 82 were caught, of which 48 were males. This movement continued for some days and on the 5th continued into the evening. On the 6th the movement was quite spectacular continuing till mid-morning, when *c.* 3,500 was the estimate. On the 7th the figure dropped to *c.* 150 and the movement ended on the 10th. Autumn movements of the species were not comparable with the foregoing and a maximum of only 50 was reached on October 23rd and 26th, with 80 on the 25th. No other reports of the spring passage have been received, except that A. J. Williams noted numbers in the hedges at Flamborough with other migrants on May 22nd.

408. Brambling (42).—A few, up to eight, passed Spurn from April 1st to 10th. The first of autumn came on September 27th with maximum passage from October 24th to 30th (*c.* 75 on the 29th). Along other parts of the coast only small numbers were recorded, with three at Flamborough on October 1st (A.J.Ws.) and six and seven on October 18th and 19th at Atwick (G.R.B.), the most seen. Flocks in both spring and autumn were also small. At Otley *c.* 30 during January (W.F.F.); at Esholt, *c.* 50 on February 23rd, increasing to *c.* 90 on March 15th and remaining at that number to March 26th; 50+ at Harrogate on March 19th; *c.* 40 at Rievaulx on November 13th (D.S.S.); fairly frequent in autumn in the Bradford area with 40 at Bingley on November 8th (J.C.L.), and 50 at Glasshouses Dam on December 3rd (A.F.G.W.). Also recorded as numerous in South Cave area on December 26th (L.S.). See Ringing Appendix.

409. Yellow Hammer (44).—Spring flocks include *c.* 30 feeding on hay seeds near Ilton on January 29th (P.Y.) with the largest flock for V.C. 64, *c.* 150 at Carlton, Nr. Leeds on January 17th (D.B.I.). At Spurn always present somewhere and never numerous. Peaks were 15 on January 24th, 24 February 27th, 20 passing south on April 15th, *c.* 20 September 26th, 20 November 13th, 25 November 15th.

410. Corn Bunting (43).—At Eccup Reservoir occurred in first three months in good numbers with 30+ in February and *c.* 35 on March 6th. During the same period at Carlton maximum was 15 on March 27th (D.B.I.). New localities in V.C. 64 were Ilkley S.F. on January 3rd (L.G.D.); singing male at Skelding Moor on July 3rd (M.R.S.); a singing bird at Bewerley from June 2nd for about three weeks (A.S.). Seventy were feeding on the sand dunes at South Gare on January 10th (P.J.S.); 14 passed over Winterset to the north in 1½ hours on January 2nd (J.S.A.), and 12 at

Norland, Halifax on April 7th (A.D.W.). Fifteen passed south at Spurn on May 7th and 13 on May 8th which were the peak days of spring; from the end of May on only the one or two local birds were noted. Early morning watchers noted 27 Corn Buntings passing south on October 25th and numbers passing on October 28th were placed at *c.* 100. On November 13th 39 passed and 34 on the 14th. Probably these were journeys to not very distant winter quarters.

415. Gird Bunting (49).—D. R. Seaward found a male in the fox covert at Redcar on September 17th.

421. Reed Bunting (55).—At Spurn residents of summer are little higher in number than those of winter but are probably different birds. Autumn maxima were *c.* 90 on September 10th, 60 on the 12th, *c.* 160 on the 19th, *c.* 100 on the 22nd, *c.* 83 on October 5th, and *c.* 120 on the 7th. Some birds continued to pass but numbers were never large.

Juveniles were passing through Knaresborough S.F. from August 9th to September 10th when 37 were ringed (J.R.M.). One was seen at Angram Reservoir on January 24th at 1,200 ft. above sea level (A.F.G.W.). At Bewerley on July 6th a pair was feeding young in a field of corn (A.S.).

422. Lapland Bunting (58).—At Spurn up to three occurred in March on eight days, and one in April on the 3rd. Other spring records, one at South Gare on January 1st (D.S.S.); one at Atwick on January 23rd (G.R.B.); one at Patrington Haven on March 20th (H.O.B.). In the autumn occurred regularly at Spurn in October and November and a few on several December days. Maxima were 20 on October 28th, 17 on November 13th and 14th, and ten on the 15th. Single birds occurred at Atwick, Flamborough and Hornsea Mere on seven dates during October and December and three at Filey Brigg on December 31st (R.H.A.) are known to have stayed into the New Year. Five arrived in coastal stubble fields at Redcar on October 2nd, remaining until the year end. Numbers fluctuated probably due to scattering of the flock with a maximum of 15 on October 29th (D.R.S.). Ten were at South Gare on October 22nd (P.J.S.).

423. Snow Bunting (59).—Good numbers wintered in January at Spurn, *c.* 180 on the 2nd being the maximum. The last one was seen on April 17th, and the last at South Gare were five on April 17th also (D.G.B., M.P.). Reported as exceptionally numerous in the spring, with the principal flocks 30/40 near Harrogate from February 6th to 9th; *c.* 30 near Grassington from February 5th to 7th; 20 at Malham Tarn on February 26th; ten at Middlesmoor on January 2nd; 12 at Eccup on January 31st; 12 near Hartwith on February 21st; 18 at Cupwith on January 10th; 29 at Flamborough on January 2nd and 18 at Hornsea on February 7th.

In autumn the first appeared at Spurn on September 23rd. Birds were few until November 13th and 14th (*c.* 170), and the species continued present but was not tempted to bait. At Redcar the autumn maximum was 50 on December 3rd and 4th (D.R.S.), and at other points along the coast recorded from September 21st onwards at Filey Brigg, Flamborough, Atwick and Hornsea with the largest number—34 coming in from the east at Filey Brigg on November 5th with 45 there on December 31st (R.H.A.); *c.* 50 at Flamborough on November 13th (A.J.Ws.); 18 at Hornsea Mere on December 4th (G.R.B.); 26 at Saltend Salting on December 24th (B.S.P.). Also occurred inland at several localities but only in very small numbers. See Ringing Appendix.

424. House-Sparrow (61).—The numbers of house-sparrows recorded in the breeding season at Spurn varies from *c.* 50 to *c.* 100 increasing as the young fly. The total ringed of the species in 1960 was 1,659. Estimates in autumn of birds passing and staying to feed reached *c.* 500; and on November 19th reached *c.* 800. On some days house-sparrows and tree-sparrows are not separated or only partially so; thus on October 8th the estimated *c.* 500 house-sparrows + *c.* 900 tree-sparrows + 1,150 sparrows passing unidentified = 2,550 sparrows.

R. F. Wormald reports a pure black bird on a neighbouring farm at Foston, Nr. York.

425. Tree-Sparrow (62).—The colony at Knaresborough S.F. reared 40 broods, resulting in 167 young, all but three of which fledged (J.R.M.). At Bramhope on October 2nd a flock of *c.* 200 occurred in hedgerow and stubble fields (J.R.G.). Occurred at Spurn with a few in January; increased in April to May (maximum *c.* 40, May 26th); then fell to a few again. The larger numbers came in October, larger than in previous years, with *c.* 900 on October 8th (see house-sparrow), *c.* 800 on October 12th and 13th, and not again over 250 and many fewer on most days in

November and December. At Redcar D. R. Seaward records some spring passage during May, birds leaving the fox covert to go north-west—maximum 14 on May 4th. In the autumn the first to return were two birds on September 18th with small numbers thereafter increasing to October 16th when 130 flew north-west in 90 minutes, 30 on October 17th and 13 on October 19th with very few birds left behind.

LIST OF CONTRIBUTORS
(with apologies for omissions)

Ackworth School N.H.S., G. H. Ainsworth, G. E. Alderson, M. Allison, C. E. Andrassy, R. H. Appleby, J. Appleton, A. Archer, B. Armitage, J. Armitage, J. S. Armitage, D. Ashurst, E. W. Aubrook, G. Aynsley, K. and A. Baldridge, F. N. Barker, Batley N. S., P. G. R. Barbier, J. E. Beckerlegge, D. G. Bell, G. R. Bennett, G. Bird, T. D. Bisiker, D. J. Blackmore, J. Booker, C. G. Booth, C. Bower, H. W. Bracken, Miss S. D. Brooks, D. and M. Brook-Taylor, V. F. Brown, H. G. Brownlow, A. D. Buffey, H. O. Bunce, C. J. Burbanks, J. Burley, C. E. A. Burnham, C. E. Burton, W. A. Butterfield, G. Carr, L. Carr, R. Chislett, R. F. Clarke, T. M. Clegg, V. S. Crapnell, A. Credland, R. Crossley, J. Cudworth, D. B. Cutts, J. E. Dale, P. Davis, K. Dawson, M. Densley, L. G. Dewdney, R. F. Dickens, C. Disbrey, Doncaster O.S., I. and S. Downhill, A. C. M. Duncan, W. G. Dye, J. C. S. Ellis, E. W. Ellis, P. R. Evans, Miss J. Fairhurst, W. F. Fearnley, J. K. and A. E. Fenton, A. Frudd, Miss E. A. W. Gill, A. Gilpin, W. Glencorse, D. A. Goode, A. Gordon, J. R. Govett, E. Grace, E. Greenwood, A. E. and J. B. Hague, Halifax N.S., R. Hardcastle, K. Hardcastle, Miss R. Harricks, Harrogate N.S., R. G. Hawley, A. Hazelwood, J. W. Heddon, C. W. F. Hirst, D. Hodgson, H. Hodgson, P. F. Holmes, R. Holmes, J. R. Horne, D. B. Iles, E. E. Jackson, H. W. Jackson, F. Jefferson, T. Jennison, T. Keeler, T. Kilburn, C. E. King, R. W. N. Knapton, D. Kramer, B. Lavery, J. H. I. Leech, A. H. B. Lee, J. T. Lee, J. C. Leedal, Leeds B. W. Club, J. C. H. Leeson, D. G. Leonard, Miss B. Lonsdale, J. Lord, B. Lucas, L. Magee, D. Mallinson, H. Marjoram, G. K. Martin, S. Martin, J. R. Mather, K. M. Mayall, D. J. Millin, R. Moat, I. Morley, G. R. Naylor, M. H. Ness, C. Nettleton, R. C. Parkinson, R. Parriřh, B. S. Pashby, M. Passman, A. Paterson, Mrs. O. M. Pennock, J. C. Petyt, J. D. Pickup, A. Pilkington, A. E. Platt, R. S. Pollard, G. R. Potts, P. C. Quin, J. Raddings, M. N. Rankin, P. A. Rayfield, G. Reynolds, R. J. Rhodes, B. Richards, Miss C. M. Rob, H. P. K. Robinson, W. K. Robinson, R. W. Robson, D. A. Rushforth, Miss M. R. Sanderson, D. A. Scott, H. E. Scott, D. R. and P. Seaward, Sedbergh S.S., K. Senior, R. P. Simms, E. S. Skinner, C. R. Shoesmith, L. Smith, R. Smith, D. Standing, P. J. Stead, E. C. Sterne, K. M. Stephenson, I. F. Stewart, A. Summersgill, D. Summers-Smith, E. C. J. Swabey, P. Swallow, D. Swindells, A. N. Sykes, E. W. Taylor, L. Taylor, M. K. Taylor, J. S. Trimmingham, T. R. Tyson, J. P. Utley, A. Vaughan, D. Vaughan, A. and A. J. Vittery, C. H. and S. Voase, W. C. Wakefield, Wakefield N.S., A. B. Walker, A. F. G. Walker, Miss D. Walker, D. F. Walker, J. E. S. Walker, A. J. Wallis, G. Wallis, W. C. Walton, Miss C. A. Ward, N. Watmough, M. Wear, C. Webb, S. J. Wells, Wharfedale N.S., O. S. White, R. Wilby, F. Wilcocks, C. Winn, G. R. Wilkinson, A. J. Williams, C. Williamson, D. R. Wilson, E. J. Wise, T. W. A. Wood, P. B. Wordsworth, R. F. Wormald, C. Worrin, A. D. Wright, D. Wright, Miss M. Wray, P. Young, and many others who visited Spurn Bird Observatory.

The Changing Scene, No. 2. A Review of Natural History in the North-West of England. Pp. 72, from J. G. Aynsough, Casterton, Kirkby Lonsdale, 3/6.

Canon Harvey writes on 'The Natural History of Helvellyn,' R. J. Elliott on 'Badgers', P. Delap on 'Lakeland's Deer', R. W. Robson on 'The Birds of Sunbiggin Tarn' and on 'Bird Ringing', R. Stokoe on 'Birds on the West Cumberland Coast', J. W. Allen systematically summarises events of ornithological importance during the three years 1957-1959, Winifred E. Frost writes on 'Fishes', N. L. Birkett and J. Heath on 'Lepidoptera', W. F. Davidson on 'Beetles', Joan D. Williamson surveys 'The Flora of Lancashire North of the Sands', Nora M. Stalker writes on 'The Mosses and Liverworts of the Ullswater-Penrith area' and lists 'Plant Records 1957-1960', and W. F. Davidson concludes with 'Geology, the Howgill Head Quarry, Whitehaven'. A interesting and useful publication.

CORRESPONDENCE

To The Editor of *The Naturalist*,
Leeds University.

DEAR SIR,

The notes on 'Breeding Reed Warblers in South Lancashire' (*The Naturalist*, April-June, 1961, pp. 51-52) draw attention to a problem common to both that county and our own. The elimination of flashes and marshy areas is surely a problem which needs tackling on a national scale. It is nothing less than a tragedy that economic considerations and temporary expediency should result in the loss to posterity of some of the most interesting and few remaining sites for marshland plants and animals.

In our own area, Swillington has suffered at the hands of the National Coal Board. Bottomboat, formerly famous for its birds, is a desert of colliery waste. Marshlands at Altofts, Mickletown, Whitwood, Allerton Bywater, Knostrop, etc., are in the process of being filled in. Ornithologists will not soon forget the tragedy of the untimely drainage of Brotherton by the Central Electricity Authority. Not even the Nature Reserve at Fairburn and Newton Ings appears to be secure against such activities.

If 'usefulness' is to be the only yardstick, we cannot, of course, complain. But surely this generation has no right to deny to all future ones the song of Reed Warblers, the sight of grebes and other waterfowl, etc., and the facilities for studying marshland wild-life.

It is to be hoped that the Union will give serious consideration to this problem, and will urge the Council for Nature and the Nature Conservancy to make strenuous efforts to preserve at least a few of the remaining areas. Further encroachment of tipping on the Fairburn Reserve should be prevented and action to ensure this should be given priority. In a comparatively short time alternative methods will have to be found for disposing of colliery waste, power station ash, etc., since all available sites will be used up.

The possible alternatives should be explored and used NOW, allowing the few existing sites to remain in their natural state.

Yours truly,

A. H. B. LEE,

25 Church Wood Avenue,

Leeds, 16.

REQUEST FOR INFORMATION

There has been comment at a number of recent Ornithological Section meetings about the virtual disappearance from some areas of Sparrow Hawks and Kestrels. It now seems probable that this is linked with the increasing use of toxic sprays and insecticides.

It would be helpful if members of the Union could provide information on the following points:

1. Has there been any decrease in the above species (and in any others, e.g. Little Owl) in their particular area? Please indicate if this is merely an impression, or whether based on recorded observations.
2. Have they any indication of possible causes for such decreases, e.g. birds found dead, corpses on gamekeepers' gibbets, etc.?
3. What is the present status of each in their area? Actual evidence of breeding pairs would be useful.

This is a trend which may well continue. Will members please collect as much evidence as they possibly can through their local societies also, and send observations direct to the recorders for the vice-county concerned.

R. F. DICKENS

(Hon. Sec., Ornithological Section)

The Naturalist

BOOK REVIEWS

Morphology of the Angiosperms, by **A. J. Eames**. Pp. xiv + 518 with 148 text figures. McGraw-Hill. 1961. £5/4/6.

Advances in Angiosperm morphology have been somewhat overshadowed in recent years by work in the newer and more fashionable branches of botany; yet progress has been substantial both as to facts and interpretations though the information is scattered through many journals. The present work is therefore particularly welcome as a comprehensive and up-to-date survey of the subject and as such will be indispensable to advanced students, teachers and botanical libraries.

The treatment throughout is comparative rather than descriptive with emphasis on evolutionary modifications and phyletic implications. Vegetative structure and anatomy are considered in the first chapter, the next nine chapters being devoted to detailed treatment of reproductive structures from the inflorescence to the seed and fruit. The primitive families of dicotyledons and monocotyledons are discussed in considerable detail in the penultimate chapter and the book concludes with a short discussion of the origin and phylogeny of angiosperms and relation of monocotyledons to dicotyledons. Full bibliographies are appended to each chapter though authors are seldom referred to by name in the text and not all the facts and views mentioned can be readily traced to the appropriate reference in the bibliographies.

There is no doubt that this is a major contribution to the literature of a subject which Professor Eames has himself done much to advance. He deserves thanks as well as congratulations upon the successful completion of a task which has occupied him for several years and which will certainly remain the standard reference work on the subject for many years to come.

W.A.S.

Spiders, Men, and Scorpions, by **Theodore H. Savory**. Pp. 191 with 15 plates. University of London Press. 30/-.

Since the Ray Society published the two volumes of *British Spiders* by Locket and Millidge in 1951 and 1953, the British arachnologist has had a comprehensive and reliable guide to spider identification, while the appearance of Bristowe's *The World of Spiders* in 1958 has stimulated an appreciation of these animals as living organisms. It is no wonder then that British arachnologists are more numerous and more active than for many a long year.

Savory's most recent book attempts to make a more complete picture by presenting a short 'History of Arachnology'. Early chapters deal with the spider in ancient mythology and in mediaeval misconception, but the bulk of the book is concerned with the world-wide interest in the Arachnida which has developed during the last three hundred years. The naturalist who is already interested in spiders, scorpions and the like will find a wealth of biographical detail presented in a concise and readable manner, but he is bound to regret the absence of any real attempt to outline the evolution of taxonomic principles—particularly in the Linyphiidae which interests the Yorkshire arachnologist so much. The modern historian of any subject needs to emphasise ideas and concepts rather than the biographical details of the men who propound them. In this respect Mr. Savory would do his book greater justice by changing its sub-title to that of 'The Lives and Works of the World's Arachnologists'.

C.J.S.

The Littoral Fauna of the British Isles, by **N. B. Eales**. 3rd Edition. Pp. xvii + 306 with 25 plates. Cambridge University Press. 35/-.

This is a new edition of a well-tryed and very useful handbook which takes identification further than the popular level without going into the detail of monographs. The section on the Polychaeta has been revised and augmented to include southern species previously omitted and some slight revisions have been made in the classification of Tunicata and Mysidacea. It is regrettable that the opportunity was not taken to add to the number of text figures and that the introduction should persist with the out-moded classification of littoral zones based upon algal zonation.

Comparison must inevitably be made with the recent 'Pocket Guide' by Barrett and Yonge, which with its popular, non-scientific approach and wealth of illustrations is easier to use. *The Littoral Fauna* requires familiarity with biological terms, gives a better training in the use of keys and must stimulate recourse to detailed monographs, but undoubtedly suffers from its lack of illustrations.

J.R.L.

The Book of Bird Life, by **Arthur A. Allen**. Second revised edition, 1961 (first published 1930). Pp. 396 with 200 photographic illustrations in the text and 53 in colour on 17 additional pages. D. Van Nostrand Company Inc., New York, London, etc. 56/6.

Dr. Allen is Professor Emeritus of Ornithology at Cornell University, U.S.A., and writes pleasantly and authoritatively for 'the general student wishing to extend his ornithological horizon'. The scope is almost all-embracing. Part I includes chapters on history, classification, distribution; life in woods, fields, orchards, marshes and shore; behaviour, migration, courtship, home-life, adaptations, plumage, coloration and changes, and relationships with man. Part II deals with methods of bird study, with chapters on 'banding', nest-finding, observation blinds and bird-photography, bird-song, birds as pets, suggestions for intensive study, and suggested reading (mainly of American authors but including some 15% British). The illustrations are from photographs by the author, or from paintings by Dr. W. C. Dilger reproduced in monochrome.

I like the book. Perhaps too much has been attempted in one volume, but it is certainly 'a readable introduction to general ornithology', which is what it claims to be. To find the same problems that beset us in this country discussed in relation to North American species adds to the interest. Nomenclatorially the author finds *European* Nightingale desirable but not *American* Robin; the reverse would have been preferable to an Englishman. Written with clarity from obviously expert knowledge, the book offers much to general students in Britain; possibly more in the direction of horizon widening than to students in the U.S.A.

R.C.

Art and the Scientist, by **Geoffrey Lapage**. Pp. 132 with 22 plates, including 8 in colour, and 18 text illustrations. John Wright & Sons. Bristol. 1961. 42/-.

Long before the advent of the printed word, illustration has been employed to amplify the written description. Perhaps, indeed, the converse is more strictly true but certainly with the advent of printing the ability freely to disseminate ideas and discoveries called for the means to add pictorial representation in order to amplify and clarify the text. Thus were born the skills of engraving and block-making, of lithography and finally photographic reproduction.

Art is a word with subtleties of definition. In a wider sense it implies no more than the possession of 'skill applied to imitation and design' (O.E.D.) but with the increasing usurpation of this function by mechanical processes it is more and more regarded as the ability to convey an imaginative idea rather than a mere fact. It is in this context that the author's discussion arises. He proceeds from the scientist's employment of artists or craftsmen as delineators, with or without intervention, to those particular people, doubly gifted, who were capable of making their own illustrations. These vary from scientists proper who developed the skill to their purpose, like Sir William Hooker or Dr. E. A. Wilson, those like P. H. Gosse who turned a previous training as a miniaturist to the depiction of animal forms, and the rare case exemplified by George Stubbs, of the artist who sought by scientific methods to ascertain the true form and function of the animals he wished to depict.

Here are the seeds of a conflict between two aspects of human perception which can widen into a gulf, as at present threatens, in which a less complete man must cast his lot with either the 'arts' or the 'sciences'. Only Leonardo da Vinci approached a complete integration of approach, if not of performance, and the author suggests in the end that the Keatsian philosophy, 'Beauty is Truth, Truth, Beauty', will remain an ideal hypothesis until the advent of some 'paragon in the history of mankind'.

The book is well produced and the illustrations are well chosen although I feel that the author would have welcomed the opportunity to have extended their range and the reader will inevitably have his personal idea of notable omissions. The author explains his reasons for limiting himself to the works of people now dead and hints at a possible second volume to deal with the living.

It is an act of considerable courage to publish a work of this kind since its nature demands that its price is high. I hope that sufficient people will have the courage to buy it and have regard to its purpose and its inner message—that the wood and the trees are one.

A.H.

Mammals in the British Isles, by Philip Street. Pp. 186 with 32 plates. Robert Hale. London, 1961. 21/-.

The preposition in the title is important for this is a comprehensive work which deals not only with indigenous and introduced species, but also those which are feral or commonly kept in captivity and, briefly, with the history of domesticated livestock.

Although it must in great part derive from earlier literature, there is nothing in this book of paste and scissors. The author has digested practically all that there is to be said and produced an account which is both readable and veracious. There are minor errors, especially in the distribution of the bats, and the treatment of the cetaceans is somewhat perfunctory but in general the book is easily the most commendable of those which have appeared in the last decade on a much neglected subject and its deficiencies are only reflections of the state of British mammalogy. There has been a recent resurgence of interest and activity which is duly noted and there are suggestions for useful amateur investigation.

While considerations of price have no doubt been paramount, and will no doubt secure for the book the wide distribution which it deserves, I hope that it will be possible to provide a later edition on a better paper and with a better binding. The copy before me is already giving at the seams.

E.H.

Communication among Social Bees, by Martin Lindauer. Pp. 143. Harvard University Press. London: Oxford University Press, 1961. 38/-.

For anyone who already knows the ordinary accounts of the natural history of the honey bee this will be a fascinating book indeed. It describes in non-technical language the most notable of recent advances in our knowledge of forms of communication in the hive. It tells how individual bees patrol the hive and modify their normal behaviour patterns to suit circumstances as they find them. The usual bee routine of cleaner, nurse, builder, guard and forager can be modified; in cases of dire necessity older bees whose head glands have ceased functioning can re-develop them and resume nursing. The account of the functioning of 'scout' bees in locating a new nesting site for a swarm is almost astonishing.

The accounts of the slightly different forms of 'tail wagging' dances in the four species of *Apis* throughout the world are also of great interest. *A. florea* dances only on a horizontal surface and the tail wagging run actually points in the direction of the food supply, *A. dorsata* can dance on a vertical comb but only when the sky can be seen whereas *A. mellifera* dances on a vertical comb in the dark and transposes a sight line to a gravity line.

This book can be recommended without reservation to all interested in any way in bees or in the study of insect behaviour.

H.H.

A Writer's Journal, by H. D. Thoreau edited by Laurence Stapleton. Pp. 236. Heinemann Ltd. London, 1961. 25/-.

This is a selection from Thoreau's extensive daily journals from which was distilled *Walden* and *A Week on the Concord and the Merrimack*. It is not only the stuff of observation and introspection of which these works are the condensation but also it reveals how its author progressed in its gathering, his experiment with style and with content and his personal development as one of the most sentient of communicative beings.

Thoreau's genius lay in the capacity for perceiving the absolute through the particular, for seeing the universe through a snowflake or a petal. This called for a detachment entailing the wilful abnegation of much that is cherished by most of us. Poverty and deprivation were the tools by which he wrought his philosophy and his writing. The contact with his fellows which he denied himself, in order that he might see them without involvement and thus with a greater sympathy, a better understanding, was a sacrifice not a misanthropy.

Like so many of his time and kind, Thoreau for the most part stands hide-bound and dusty on the library shelf—or in the basement. This is indeed a pity for his message has validity far beyond his generation. What could be more topical than his remark, 'But I think the top of Mt. Washington should not be private property; it should be left unappropriated for modesty and reverence's sake, or if only to suggest that earth has higher uses than we put her to.'

A.H.

The Ocean, by **F. D. Ommanney**. 2nd Edition. Pp. vii + 224, with 16 figs. Home University Library, 203. Oxford University Press. 8/6.

This is an inexpensive book which covers a lot of ground. It follows the now familiar formula of chapters devoted to the physical environment, methods of oceanography, forms of marine life, and the principal marine environments, i.e. the open sea, plankton, the sea shore, the abyss, etc., and also includes accounts of sea fisheries and whaling. With this wide range in a limited space each chapter is at best a summary and inevitably selective. It is, however, well written and readable, though the few text-figures and maps of currents and ocean deposits are barely worth inclusion.

The intending buyer must consider if it might not be better to spend more on one of the more comprehensive and better illustrated books of similar scope—e.g. *The Seas* by Russell & Yonge, or one of the *New Naturalist* Series dealing very adequately with one sphere of marine biology. At its price, however, this is probably the best that can be done.

J.R.L.

Some Aspects of Life in Fresh Water, by **E. J. Popham**. 2nd Edition. Pp. viii + 127 with 37 text figures. Heinemann, London. 12/6.

This is a revised edition of one of the Scholarship Series in Biology, first published in 1955 and reviewed in *The Naturalist* for the following year. A number of minor corrections and additions to the text have been made, some diagrams redrawn and a new section of about four pages added on the respiration of water-bugs and the physiology of the physical gill. The book remains a very good introduction to fresh water ecology; unfortunately, its price has doubled since the first edition though the quality of the paper has been improved.

P.F.H.

Portage into the Past, by **J. Arnold Bolz**. Pp. 182 with 8 plates. University of Minnesota Press. London: Oxford University Press. 1961. 36/-.

Fired by the journals, little more than a century old, of the explorers of the North American interior, Dr. Bolz resolved on a canoe trip in the steps of the *voyageurs*, the professional transport men who brought out furs and took in supplies along the river-ways and lakes. He chose the Ontario-Minnesota border country and made the journey in the company of his wife and a trapper-guide. Their route led from Lake Superior to Rainy Lake, over a distance of 208 miles which included 15 miles of portage over 32 carrying places.

The account of the trip, by itself relatively uneventful, is interlarded with extracts from early diaries and accounts, with facts and figures concerning the traffic of the past. The natural history of the region and of the trip is mentioned only incidentally.

E.H.

In the Footsteps of the Naturalists, by **Islay Doncaster**. Pp. xii + 114 with 13 plates and 6 line drawings. Phoenix House, Ltd. 12/6.

Mrs. Doncaster aims to interest the young naturalist by setting up great men as examples; she chooses Linnaeus, Gilbert White, William Smith, Audubon, Waterton, Gosse, Fabre and Darwin, and in seven or eight pages she writes an attractive, balanced account of each naturalist in turn. At the end of each chapter, a study section includes a practical 'how to do it' part which is much too ambitious and lacking in detail to be of much use to the young inexperienced naturalist. Quadrats, *Balanoglossus* and pH indicators are surely too advanced for those youngsters who will benefit most from reading the biographical sections.

C.J.S.

Adventures Unbridled, by **Moyra Williams**. Pp. 199 with 19 half-tone illustrations. Methuen & Co. Ltd., 1960. 21/-.

Moyra William's new book gives a fascinating account, delightfully spiced with humour, of an unconventional method of training young horses. Apart from the interest in the results themselves the book is valuable for its refreshing approach to the whole problem of training, whether with or without a bit. Three cases described in detail show that if the rider is willing to make the mental effort to study the way his horse's mind works and to modify his methods to suit each individual, then he will be amply rewarded by greater co-operation and mutual enjoyment.

Trees and Shrubs of the British Isles, by **A. W. Darnell**. Pp. 128 with 16 coloured plates and 20 pages line drawings. Ward, Lock & Co., London, 1961. 12/6.

This Junior Field Guide comprises an introduction and short descriptive and distributional notes, accompanied by coloured or black and white figures of nearly three hundred plants. These vary from the heaths to the forest trees and include not only native species but also denizens and even plants not to be found outside of cultivation.

Although a list of the families concerned is given at the beginning, the arrangement is alphabetical. This is not without its snags because only an inspired guess will suggest whether the order is based on the noun or its adjective. Bladder Senna, for example, is found under B but Variegated Laurel lurks under L. The alphabetical system is simple enough to provide an enormity of confusion for under Laurel are included species of *Prunus*, *Kalmia*, *Daphne*, *Magnolia* and *Aucuba* whereas *Laurus nobilis* is elsewhere as the Bay-Tree. The illustrations are entirely adequate to their purpose and the book, which includes Pecan-nut and Poison Ivy would be almost as useful on the other side of the Atlantic. Not a work for a budding botanist but acceptable to the enquiring lay-child.

A.H.

The Hidden Life of Flowers, by **J. M. Guilcher**, with photographs by **R. H. Noailles**. Pp. 94, with more photographs than text. World of Nature Series No. 5. Oliver & Boyd Ltd., Edinburgh and London. First published 1954, this edition 1961. 7/6.

This little book consists of sequences of photographs of floral structures, with an appropriate explanatory text. Examples of different types of floral mechanisms are shown, as well as stages in development in a poppy flower from the opening of the bud. Pollination is clearly and adequately illustrated, but in spite of the claim of the preface, fertilisation is not included. We move from the germinating pollen grain straight to the swelling capsule.

It is quite evident that the photographs are splendid and have been taken with considerable skill. However, the quality of reproduction, though adequate, gives this reviewer the firm impression that the original prints must display markedly better definition than is seen in the published plates.

J.D.L.

California Spring Wildflowers, by **Philip A. Munz**. Pp. 104 with 96 colour photographs, 173 line drawings and 2 maps. University of California Press, 1961. Price: cloth 38/- net, paper 24/- net.

This useful account of about 250 of the 6,000 flowering plants in the State of California, many of which are prized in Europe in cultivation, is presented with a clarity of style and format that we have learnt to expect from publications originating in America. For identification, there are four sections based on flower colour and these are accompanied by many excellent line drawings and colour photographs. Apart from their great natural beauty, one cannot fail also to be charmed by the varied and colourful local names of many of these flowers, as for example Inside-out Flower, Popcorn Flower, Ocean Spray, Woolly Blue Curls and numerous others.

A.W.

Ornithological Report for Northumberland and Durham 1960, by **J. C. Coulson** (A). **Ornithological Report on the Farne Islands for 1960**, by **J. C. Coulson** and **Grace Hickling** (C). **Salinity Fluctuations and the Fauna in a Salt Marsh**, by **D. W. Sutcliffe** (B). The N.H. Socy. of N., D. and Newcastle-on-Tyne, The Hancock Museum, Newcastle-on-Tyne. Vol. XIV of the Society's Transactions (New Series), Nos. 1 (A) and 2 (B and C). 5/- each.

The year's ornithological records are well compressed with prominence to the more important items. Autumnal movements were slightly earlier than in Yorkshire; thus the peak of the mid-September movement in the Tyne area came on September 17th, and at Spurn from the 19th to 22nd; Siskins were in strength in both places and periods (c. 300 in the Tyne area on the 17th). Much that is of interest to Yorkshiremen is included in the Classified Notes.

In No. 2 (C), J. C. Coulson and Mrs. Hickling deal largely with the status of the breeding birds of The Farnes. Each paper includes interesting ringing data with

some recoveries in Yorkshire. No. 2 also includes (B) 20 pages of valuable entomological and ecological matter by D. W. Sutcliffe, resulting from studies carried out over three years at Seaton Sluice. Pools vary in degree of salinity with frequencies of high spring tides. Aquatic insects vary in their toleration of salinity. An excellent paper. Among the 'references' I note 'Series of Papers on the Entomology of the Spurn Peninsula', by the late W. D. Hincks, D.Sc., *et al.*, *The Naturalist*, 1951-54. R.C.

Birds of Wales. Photographed by **Arthur Brook**. 26 reproductions with a brief note on the habits of each species, and an introductory page. $8 \times 5\frac{1}{2}$. The National Museum of Wales, Cardiff. 2/6.

Brook bequeathed his negatives to the Museum. This booklet is a nice memorial to him and his work. He always had a preference for crag-dwellers, and the double page with Carrion Crow and Raven facing each other has 'Arthur Brook' written all over it. The Dipper whose wing-formula can be checked in detail from the spread feathers photographed, is perhaps the most remarkable in the collection, in which there is scarcely one that I do not remember in the original; almost all are worthily representative of Brook's work; of the work, that is, of a great Welsh enthusiast and personality among naturalists of the first half of this century. R.C.

Shell Life on the Seashore, by **Philip Street**. Pp. 180 with colour plate and 47 line illustrations. Faber and Faber. 18/-.

A sound and informative though somewhat expensive book serving as an introduction to the common shells found on coastal rocks and seashores of Britain. This is a useful guide for the pottering holiday-maker who collects single stranded valves of marine bivalves which burrow through sand and mud and bore into rock and wood, and who wishes to learn something of the molluscs which built them.

There are chapters on limpets and mail shells, carnivorous snails, octopuses and crustacean barnacles, and some hints on collecting, preserving, and photographing the Gastropoda and Lamellibranchia. The chapter devoted to oysters and scallops is a fascinating one. J.A.

The Real Book of Insects, by **Jane Sherman**. (Real Book Series.) Pp. 192 with 38 black and white illustrations. Dobson Books, Ltd., London. 10/6.

Enjoying Nature's Marvels, by **J. Bentley Aistrop**. Pp. 184 with 36 black and white photographs and 15 line drawings. Dobson Books, Ltd., London. 12/6.

These are two quick-moving and world-ranging surveys; Miss Sherman's of insects only, Mr. Aistrop's of insects, mammals, birds and fish, wild or in captivity. Easy to read, in the familiar popular natural history style, there is little that is new to an adult naturalist. F.H.

Elsa: The Story of a Lioness, by **Joy Adamson**. Pp. 48, with 50 photographs. Collins & Harvill Press, London, 1961. 12/6.

In a larger format, this is a truncated version of *Born Free*, the story of the African lioness, already reviewed in this magazine. It comprises a selection of the most striking photographs with the addition of a few later ones showing Elsa's cubs, together with a letter-press limited to extensive captions to the pictures. E.H.

Filmstrips: Perri No. C6294, **Beaver Valley** No. C6295, by Walt Disney, with notes by J. H. Elliott. Educational Productions Ltd., Wakefield, Yorks. 27/6 each.

These two filmstrips are gay and colourful, suitably appealing to children, showing a varied assortment of animals in their natural surroundings yet linked together round a central theme, a squirrel in one case and a beaver in the other. It is refreshing to be lifted out of our own rather narrow range and to have our horizons widened to include some of the more interesting inhabitants of the North American continent.

The photography is imaginative and of a high standard, and with the detailed notes by Dr. Elliott would be a stimulating and enjoyable addition to any filmstrip library. M.S.H.

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 Yorkshire Naturalists'
 ~ Union ~

CENTENARY ISSUE

Edited by

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

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CENTENARY DINNER, 1st DECEMBER, 1961

Members are reminded that the Centenary Dinner will be held at University House, Leeds, on Friday, December 1st, 1961. Our Patron, H.R.H. The Princess Royal, has graciously consented to attend.

Tickets for members, associate members and friends are available at a cost of £1 each from the Dinner Secretary (Mr. M. M. Sayer, 10 The Gardens, Heath Road, Halifax). Dinner jackets or lounge suits may be worn.

Mr. Sayer would like to hear from any members requiring hospitality and from members and friends living in or near Leeds who could offer hospitality for the night of Friday, December 1st.

Secretaries of affiliated societies are asked to bring this information about the Centenary Dinner to the notice of their members.

YORKSHIRE NATURALISTS' UNION AND BRITISH TRUST FOR ORNITHOLOGY

A **Ringers' Conference** will be held at Cober Hill Guest House, Cloughton, Scarborough, during the week-end, Friday, 10th to Sunday, 12th November, 1961.

The Conference is intended primarily for members who are already ringers, but others who contemplate applying for ringing permits may find it useful to attend.

Details and bookings through the Secretary of the Ornithological Section of the Y.N.U., R. F. Dickens, Ridgefield, Glasshoughton Hill, Castleford, Yorks. (stamped addressed envelope, please).

NOTICE.

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 :

The Entomologists' Monthly Magazine.

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FOREWORD

THE RT. HON. THE LORD HURCOMB, G.C.B., K.B.E.

No more appropriate tribute could be paid to the Yorkshire Naturalists' Union upon the completion of a century of remarkable achievement than a special issue of *The Naturalist*. In the spirit of the Union itself, *The Naturalist* has strikingly demonstrated the determination of Yorkshire naturalists to organise their pursuits and show their appreciation of the importance of recording and publishing in a permanent and accessible form the results of observations in the field. This wise combination of effort, together with a remarkable series of papers of high scientific interest and importance, made those results available to all engaged in similar pursuits far beyond the confines of the county.

Highly qualified specialists have contributed to this present number a series of articles dealing in detail with the history of most of the branches of natural history and a glance at them suffices to show their range as they have been developed in Yorkshire. The distinction of the county's total contribution to the study of nature in England during the past century is strikingly exemplified. In ornithology, in botany, and in other departments many names of great fame and authority at once stand out, and they occur steadily throughout the period down to the present day, closing sadly with the great loss of W. D. Hincks. How much also do we owe to the great mass of local records made by observers perhaps of less conspicuous individual distinction but, in the aggregate, impressive and valuable. Indeed, they gain in interest and in value as time goes by and acquire more and more significance as one looks back to conditions which have changed, or are threatened with changes likely to affect adversely so many aspects of our wildlife. We know too little about the exact status of species and the detailed use of land, even in the recent past, and without that knowledge it is more difficult to appreciate the present and to frame the right policy for conservation in the future.

W. H. Hudson somewhere remarks with relief on escaping from what he calls 'the dreary details of distribution.' One can understand what he had in mind, but without those details, dreary or not, and without the long-continued, patient local effort which has been devoted to their accumulation, our knowledge of ecological development and of the trend of many populations of wild animals and plants would be vastly the poorer. Yorkshire naturalists have certainly always taken their full share in recording local biological occurrences, botanical and faunal. At the same time they have never neglected, but may claim to have excelled in, wider and more scientific researches in almost every important field, as the pages of

The Naturalist and the list of the Union's publications so clearly show. And what other county can claim to have been so closely associated with the origins and foundations of national bodies such as the British Ecological Society and the British Mycological Society, to say nothing of the British Association itself?

In the fascinating review of the earlier decades of the Union's history which forms the subject of W. Denison Roebuck's presidential address in 1903, he summarised some of the advantages which this great county presents to the field naturalist. Having visited Spurn and having twice visited Malham Tarn during the current year, I could not be other than again deeply impressed by the truth of his remark. With its moorlands and plains, its stretch of magnificent coastline, its largely self-contained river systems, and its varied wealth of physiographical interest, it has indeed advantages over many less fortunately situated counties, and one can only note with admiration the continued vigour with which Yorkshire naturalists have availed themselves of their advantages.

The title of the original association of West Riding societies itself suggests the importance of concentrating and 'consolidating' resources and effort wherever that can be safely achieved without fear of losing local touch, and while maintaining a convenient division of functions. That is a problem to be considered, and I hope to say something about some important recent developments on the national and international scale in my presidential address.

It is the future to which we have to look and to a future which presents many new difficulties, and indeed threats for all those concerned in the study and conservation of nature. We cannot more fittingly honour the devoted and distinguished names of the past century than by addressing our own minds in the same spirit to the urgent problem of the immediate future, and their efforts and achievements should be our inspiration.

In conclusion, I would ask to be allowed to record my respectful congratulations to the Yorkshire Naturalists' Union upon the celebration of their first centenary, and to convey to the Union and all its members my best wishes for the future. In these good wishes I know that I can join various organisations engaged in the conservation and study of our wild life with which I have the privilege to be closely associated—the Society for the Promotion of Nature Reserves, the Royal Society for the Protection of Birds, the Field Studies Council, the Council for Nature and The Nature Conservancy. Endless opportunities for new and exciting work still lie ahead, and I have no doubt that they will be seized and developed fruitfully and successfully in your Union during the second century which you are just entering.

THE FIRST HUNDRED YEARS in Brief Survey

ALFRED HAZELWOOD

It may be considered remarkable, in a country which has often shown itself reluctant to embrace the decimal system, that we should be so consistently committed to the honouring of our centenaries. The century has this advantage, however, that it comfortably spans three generations and thus allows us contact at no more than second-hand with the time and circumstance of our origins. It enables us to look back with comprehension to the aims and objects of our forefathers, gives the signal to pause and consider our present orientation and dynamic and the opportunity for so ordering the affairs of our society that they be most likely to give future generations an occasion for pleasurable and profitable recollection.

After thus philosophising, it is perhaps a pity to have to make confession that the actual origins of the Union, although clear enough in the broad outline are somewhat obscure as to detail. Not more so now than they were fifty years ago when Denison Roebuck reviewed the first half-century in methodic detail, for when dealing with those societies which first decided that their mutual interests would be served by meeting in concourse, he listed them as Heckmondwike, Halifax, Huddersfield and Wakefield. In the first minute book, however, Halifax has been deleted in pencil and Holmfirth added and the facts are beyond recall. Present partisanship in this early dispute would be invidious and both societies are to be honoured among our founders.

The West Riding Consolidated Naturalists' Society, which was the Union's prime title, functioned at first intention in quite a different way during its early years from the pattern which developed after its expansion. The parent societies were all in adjacent towns and the meeting place for the excursions was determined by its being within walking distance of them all. In fact, the meeting was the culmination of the day's activities for the members observed and collected their trophies as they travelled to the assembly point. Once met, some nominated mentor was expected to discuss the accumulated material pertaining to each section and 'Name' it, a procedure quite in accord with the spirit of the times, when curiosity was concerned with identity, but which was rapidly outgrown into wider considerations.

This early epoch lasted for fifteen years. At the end of this time, the notion of 'meeting together, having a kindly interchange of thought and becoming acquainted with the natural history of the districts of each other' had so proved its worth that it was readily extended to the entire county and at Pontefract, on April 2nd, 1877, became the Yorkshire Naturalists' Union.

Other significant changes were made at the same time. The sectional system, modelled on that of the British Association, was introduced; the excursions were made more purposive and restricted to a defined area with a prepared programme. It was laid down that the excursions were to be serious investigations and that there were to be no attractions to the half-hearted in the form of sight-seeing or field lectures—a stringency which is still maintained and which has always provided a dynamic safeguard against the twin perils of inertia and ineptitude which have proved the undoing of some other societies.

The wisdom and the vision of our forefathers, so denigrated in current fashion, is nowhere better confirmed than in the Pontefract rules, all of which have done so much to hold the Union erect in a corset of correct procedure which, maintained by a succession of determined and able secretaries, has never been relaxed and seldom modified. We were set on a true path and it would seem that the greater part of the credit as architect of this successful constitution must be given to W. Denison Roebuck, who was honorary secretary from 1876 to 1901 and who was relieved of that office only in order that he might be distinguished with the presidency.

One feature which has contributed significantly to the vitality of the Union was the provision by which any individual so remotely or unfortunately situated as to be beyond reach of a local society could become a member of the Union in his own right. Thus there was built up, without direct intention, a core of membership which was independent of the vicissitudes which attend upon all local societies and which has preserved a continuity of people expressly devoted to the larger objectives of the Union without losing sight of its constituent function. Admittedly, what was designed to be the tail has for some time wagged the dog, although only in

default of a more active and militant role by the local societies which comprise the essential Union and which are equally vital to its successful operation.

No society is better than its secretary and the Union has been, in general, most fortunate in this regard. W. Denison Roebuck has already been mentioned; his successor, T. Sheppard, Director of the Hull Museums, remains in the memories of the over-forties, forceful, uninhibited and the perfect foil for T. W. Woodhead of Huddersfield, who succeeded him as secretary and shared with him the editorship of *The Naturalist* for many productive years. W. E. L. Wattam, who partnered Woodhead in the secretaryship, was an all-round naturalist who found and communicated a perennial joy in the natural and the commonplace, seeing, like Gilbert White, the world reflected in his parish. So to Chris. Cheetham, that familiar figure, trimly bearded and knickerbockered as one in uniform, for so long a familiar and sometimes devastating figure at field and indoor meetings alike. A stickler for procedure, his interventions and stentorian *sotto voce* stage directions to a fumbling chairman ring down through the years. Since his death in 1954 the office has been accepted by those, happily still with us, who have accepted the burden as a duty deriving from their devotion to the Union, quietly and efficiently keeping our affairs in order until the arrival of a new personality who will carry us into the different realm of tomorrow.

Our more numerous treasurers, too, have served us well, always contriving to cut their annual coat from an amount of cloth which is never more than adequate and which sometimes must have demanded a cunning devisor. It has always been their aim so to conduct the affairs of the Union that the annual subscription was never beyond the reach of anyone with the interest to join and even today at a modest pound it is cheaper, in terms of what money can buy, than ever before. It was half a guinea in 1913.

The custom of electing annually a President who is Yorkshire born, resident in the county or with some more tenuous connection, has always been maintained. It is a tradition which has provided us with many men of merit and distinction drawn from the peerage, from the academic field and from those who, self-equipped and assiduous, have made not the humblest contributions to the natural sciences. The requirement that it is a presidential duty to deliver an address at the Annual General Meeting has produced a series of papers as varied in their content as in their significance. Some have been avowedly concerned with the history of the Union either as a whole or in part; others have been outstanding contributions to the branch of science which was their deliverers' forte (and if some of these have been received in dignified somnolence then who shall cavil, for all things are not of equal fascination to all men?). Some addresses have been outstanding for the urbanity and humour which has clothed their factual bones and these are treasured in the memory, for the attainment of knowledge and the gift for its communication walk all too infrequently hand in hand. Most of these addresses are to be found either in *The Naturalist* or in the *Transactions* of the Union and there are some which could be reiterated today with profit.

In order to express the comital function of the Union as well as may be, it has always been the practice for the Annual General Meeting to be held at a different venue in each year; for the Union to be the guest of one of its member societies and to combine with its transaction of domestic business a further opportunity for 'friendly intercourse' in the shape of an exhibition and *conversazione* or, in more hardy days, with a mid-winter field meeting. In 1910, for example, the A.G.M. began on December 17th with a field meeting in Marske Quarry to examine the Bajocian plant bed. After lunch in Middlesbrough there followed a series of sectional meetings and the General Committee which required the attendance of all members who received a 'special summons'. A meat tea (at 1/6) replaced lost calories before the General Meeting at which the President took the chair 'supported by prominent members'—a phrase with a variety of possible interpretations—and after which he, Professor A. C. Seward, F.R.S., delivered his address on 'The Jurassic Flora of the East Riding in relation to the Jurassic Floras of the World'. What must have been a wonderful and exhausting day ended with a three-hour *conversazione* under the aegis of the Cleveland Naturalists' Field Club (Morning or Evening Dress), graced by musical selections and fortified by light refreshments. Although the soiree went on until 10-30, the last train for the main Yorkshire towns left at 9-17 for those who did not take advantage of the 'first-class hotel accommodation' at greatly reduced charges'.

Today, more's the pity, we are not so orgiastic in our annual revelries since we are no longer imbued with the same exciting prospect of discovery, entirely in error, since the work our fathers began has not been carried a great deal further and there are unknown landscapes much nearer than the moon.

The field meetings of the Union are held in the summer months. One meeting is held over Whitsuntide and another takes place over a week-end, the rest comprising a single day apiece, usually on a Saturday, but recently by way of experiment, on occasional Sundays. Each is presaged by a circular which outlines what can be expected in the area and what can usefully be done to complete gaps in our knowledge. Each is brought to an end by a formal meeting at which the principal and noteworthy observations are recorded. Since the adoption of the Watsonian vice-counties, it has been the practice to hold one meeting in each of the five which comprise the entire county and each in turn is visited during the protracted Whitsun meeting. Arrangements are in the hands of a divisional secretary whose unobtrusive stage management always contributes largely to the success of the meeting.

In times past it was the usual practice for members to assemble by rail at 'pleasure party rates' by the 'G.C., G.N., H. & B., L. & Y., L. & N.W., Midland and N.E. Railways'. For more remote places it was then necessary to continue by 'conveyance' and the divisional secretary's task must have been even more arduous than at present when the majority travel by car. By the same token there may, over the years, have been some loss of *camaraderie* and of the sense of adventure which must have been associated with areas visited for the first time. It is interesting to note that the Union did not always confine itself to the county. In 1910, for example, a meeting was held jointly with the Lincolnshire Naturalists' Union at Scunthorpe and in the following year both Unions met together at Barton, on the Lincolnshire side of the Humber.

At this time, the circulars which outlined the arrangements for every meeting were careful to state by name the official representative of each section so that responsibility for a sectional report and for field guidance was clearly delegated, a useful custom which seems now to be somewhat in abeyance.

It was a frequent custom for the party to be assembled for a photograph to which the prevalent beards, billycocks, boaters, breeches and bow ties lend a gravamen which was doubtless matched by assiduity. It is to be remarked that the historian of the next centenary will not find such adequate record from the present since the modern camera is seldom expansive enough for group photographs and their reproduction would be an unwarranted extravagance in these times when so many have so much.

It is a surprising thing to find that throughout the history of the Union, its individual membership has been maintained at a steady rate and that if the present trend to increase is maintained it will soon carry us into numerical realms hitherto unknown. Similarly, although there has been rather more fluctuation through the years, the number of constituent societies compares well today with any period of the Union's history. In 1901 it was reported that of the seventy societies which had from time to time comprised the Union, thirty-one were still actively associated whereas today there are forty-two, though it is doubtful whether the total numerical strength represented by these would be equivalent to the associateship of fifty years ago. The problem of the uncommitted, that large body of people which is in sympathy with our aims and interested in our work but reluctant or hesitant to be members of the Union has always been a tantalising one. Perhaps when the devices and expedients for the occupation of our increased leisure have exploited to satiety their petty field, there will be another of those social phases of personal activity and self-education which was so much to the fore, at least in northern England, just one hundred years ago.

There are difficulties, of course. It is now no longer possible for any one man to become an accepted authority on several branches of natural history since the expansions and ramifications of discovery make it difficult for even the professional specialist to keep abreast of the literature in his own limited field. At the same time, much has gone unrecorded during the past decades for the lack of true naturalists, those curious enough to perceive and to record the changes in the plant and animal populations which are always in progress but which are all too seldom documented until it is really too late. There is a perpetual need of people who, themselves uncommitted to some definite project of research, nor slavishly adherent to one particular branch of natural science, are at liberty to scan the whole field of

nature within their parish, patiently recording all things commonplace in the realisation that the natural history of an area is primarily the story of those organisms which are at home in it, which thrive there at least for a season, rather than of those which are noteworthy only for their rarity or impermanence. There is still so much to be done within the compass of the average naturalist and without recourse to laboratory procedures, and the Union's main reason for existence remains to promote friendly intercourse between those who are content to work at this fundamentally important though unsensational level.

Something must be said of the Union's connection with *The Naturalist*. As a publication bearing a somewhat comprehensive title, and sub-titled then as now, a Journal of Natural History for the North of England, it had existed under various editorships for many years before it passed in 1884 to the supervision of Wm. Denison Roebuck (how that name recurs!) and clasped hands, shyly and non-committally, with the Union. Shortly afterwards the editorship passed to that famous pair, Sheppard and Woodhead, and the connection with the Union was tightened in a true symbiosis, *The Naturalist* profiting from the assured circulation afforded by the membership and by a financial support which has made increasing demands on the financial resources of the Union. Fifty years ago, *The Naturalist* accounted for about one-third of the Union's expenditure, now it is proportionately more than double.

On the other hand, the Union has derived great benefit, and may indeed have been held together, by having a publication of high repute which serves as a vehicle for its announcements and its reports. It has been claimed that *The Naturalist*, which began in title in 1833, is the oldest scientific periodical in the British Isles. Links between its earlier series, however, are tenuous if they exist at all, but on firmer ground, the present series dating from 1875 as the Journal of the West Riding Consolidated Naturalists' Society is a very lively octogenarian appearing quite capable of celebrating its own hundredth birthday at the appropriate time.

Once again, the great proliferation of specialist journals tends to leave a more general organ bereft of the more scientific papers and at the same time creates the demand for a greater number of interpretive articles.

The editorial burden is not the least of the demands which the Union makes upon its honorary officers and our debt to those who have shouldered it, often for long periods, is very great.

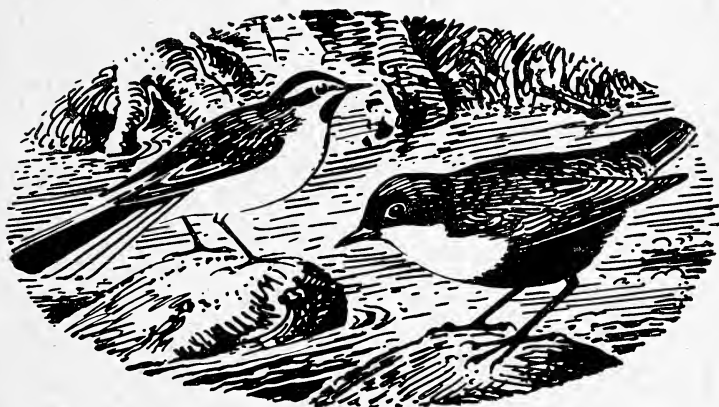
Permissible though it may be to look backwards on reaching a significant milestone, it is equally necessary to take stock of the present and survey the road ahead. Our membership, though giving no grounds for complacency, is sound and increasing. There is much to be done and we have the prospect of increasing leisure in which to engage ourselves in further exploration of the natural history of the county. The foundations of our studies have been well-laid, but Nature is not static and indeed there are times when we must run to keep up with her. When the tale of the next hundred years comes to be told, let us hope and do our best to ensure that it can be surveyed with the same respect and satisfaction as we can accord to the century which we now leave behind us.

A CENTURY OF ORNITHOLOGY IN YORKSHIRE

RALPH CHISLETT

AFTER spending days in skimming old minute books, old *Naturalists*, and making notes, I came to agree with the dictum of Henry James: 'It takes a great deal of history to make a little literature.' Nevertheless, I found the process very interesting. I admire the energy and keenness of those old-time naturalists and the manifest ability of some; and I was envious of their freshness of outlook, and of the fields in which they worked, largely unexplored and unexploited. Their books of reference, if they existed, became challenges as experience revealed inadequacies; and the challenges were met in the course of time.

How the pioneers reached some of the places they explored is something of a mystery. Horse-drawn waggonettes, and 'shank's mare', along dusty roads—how dusty the roads were, or muddy, especially in limestone country!—supplemented the railway service after it became established. After a meeting of the Union at Muker in Swaledale in 1890, most of the party walked over to Hawes by the Buttertubs Pass, several of them descending to the bottom of one shaft. Heavy nailed boots and knee-breeches were worn by some; shorts had not arrived for either sex



and the ladies wore long skirts. Bowler hats, beards, and stout ash-plants were frequent; one group photograph shows several top-hats at a field meeting.

To skim the records of a hundred years may be salutary. Secretaries and editors show an infinitude of individual variety. Admiration for the work of secretaries who recorded carefully was tempered occasionally by blank pages in minute books left to be filled in later, which still remain blank. Over such a long period recordings could hardly fail to vary in quality. The Union has been fortunate in the services of many naturalists who took pleasure, not only in their own subject-matter and work and in their own and others' success, but to whom service was its own reward. Even minutes can be written with wit and may reveal more than first intended, glimpses of regional jealousies, of sectional rivalries, of very local patriotism, of generous appreciation.

The period of the Union's history that most impressed me was that during which W. Denison Roebuck was active as secretary and editor and that ended with his election to the Presidency of the Union in 1903. With his appointment minutes at once became more complete and readable; and for his presidential address he brought the history of the Union up-to-date. W. Eagle Clarke was joint secretary with Roebuck from 1880 to 1888 when Clarke left for the Edinburgh Museum. Jointly, too, in 1881 they published their *Handbook to the Vertebrate Fauna of Yorkshire*—an excellent piece of work at that date. A number of years later I attended two meetings at which Roebuck spoke, and can still remember the energetic protest he made against being superseded by the late A. Whitaker as recorder for bats. Old men need to give place to younger men; but if they feel themselves to be still in full possession of their faculties it may be very unpalatable if a

younger man is elected without the senior being consulted, as apparently had happened to Roebuck. I also saw him at Roche Abbey in 1912 when he was collecting mollusca although then a very old man. A. Whitaker was an excellent naturalist, but ceased to be active in the Y.N.U. after removing to Sheffield during the first World War.

The moving spirit in forming a federation of Naturalists' Societies was William Talbot of Wakefield, whose only published work was a *List of the Birds of Wakefield*. Thus ornithology can be said to have been prominent in the Union from the beginning. Obviously such societies existed before 1860 or they could not have federated. The first secular societies usually called themselves 'Philosophical' and were concerned with knowledge in its widest application—such were formed in Leeds in 1820, York and Hull 1822, Whitby 1823, Scarborough 1827; and others followed. Although the Leeds Philosophical Society already existed, the one at York became the Yorkshire P.S. In 1831 the York (or Yorkshire) Society took the lead in forming the British Association for the Advancement of Science. In 1844, at a meeting of the British Association held in York, Thomas Allis presented his report on the birds of Yorkshire, which appears never to have been published until T. H. Nelson and W. E. Clarke found it so useful for their two volumes, *The Birds of Yorkshire*, sixty years later.

A Yorkshire Naturalists' Club formed in York in 1849 deserves a brief mention. Dr. B. R. Morris was the secretary and his brother, the Rev. F. O. Morris (of Morris's *British Birds*) was a member. At a meeting of the Club on October 31st, 1849, a male Orphean Warbler was exhibited, and is the first of the species for Britain to be cited in Witherby's *Handbook*. The Club's minutes were not always so factual. Referring to depredations of Jackdaws among Guillemots' eggs at Flamborough, Mr. A. E. Hargrove 'had ascertained the Guillemots in revenge, frequently seize the depredator, carry it off to sea, and having "immersed" it and thus wet its feathers, leave it to its fate'! The meetings in York mainly took the form of 'Conversations' concerning specimens exhibited, without formal papers. The Club also had field meetings in areas as far apart as Redcar and Doncaster. Yarrell's *British Birds* was added to the library in 1854 at a cost of £4 14s. 6d. The minute book continues, not always decipherably (it had a medical man as secretary!) until 1855; and the remaining blank pages were never used. One of its rules provided for the preponderance of officials and committee members to be resident in York or its vicinity—an unwise rule to my mind for any society claiming county status.

The presidency of the Union was conferred yearly as an honour by the executive upon naturalists who were acknowledged leaders in their own subjects, and had some definite connection with Yorkshire. Nominations were made by the different sections in turn. The President's only stated duty was the delivery of an address at the annual meeting. After a little, more recent modernisation, the main features of the constitution remain in force to-day.

The first Presidents of the Union were ornithologists only in a general sense, being usually 'all-rounders'. Then, in 1887, Sir Ralph Payne-Gallwey was elected. His books on ducks and duck-decoys still sell at second-hand booksellers; his daughter was a member until her death recently. He was followed in 1889 by H. E. Dresser, whose *Birds of Europe* in eight volumes was a splendid standard work for a very long time. In 1893 Henry Seebohm of Sheffield was elected President; he had produced several works in the previous decade, and published his *Coloured Figures of the Eggs of British Birds* in 1896. John Cordeaux, elected in 1896, published much concerning the Humber area and was a tower of strength to both the Yorkshire and Lincolnshire Naturalists' Unions. In 1906 W. Eagle Clarke was elected; his *Studies in Bird Migration* is still a standard work. He had done a great deal of work in Yorkshire and began the systematic work, completed by T. H. Nelson and F. Boyes, that led to publication in 1907 of *The Birds of Yorkshire*. When Eagle Clarke left Yorkshire for Edinburgh in 1889 he was presented with an illuminated address signed by ten Past Presidents, a series of volumes of *The Ibis*, and a clock.

From this time I remember personally all the ornithological Presidents. W. H. St. Quintin (1909), the squire of Scampston, chaired the Wild Birds Protection Acts Committee most capably from 1906 to 1932. Riley Fortune (1915) was an example of the youthful collector who turned keen protectionist in his maturer years. He was one of the half-dozen earliest pioneers in nature photography; and continued to serve the Union to the end. Professor W. Garstang (1918), who attended our meetings regularly, wrote (*inter alia*) on the songs of birds.

H. B. Booth (1921) came to meetings, indoor and outdoor alike, apparently straight from the Bradford wool market, bowler-hatted and umbrellaed, impedimenta which did not prevent a hasty retreat with several of us over a fence once when an irate male *Bos domesticus* appeared. He well and truly served and influenced the Union for a long time, mainly through the Vertebrate Section; and when he engineered my own nomination in 1939 left me in no doubt of his hope that I should be able to reorganise ornithology in the Union. I tried.

When W. B. Alexander (1948), of *Birds of the Ocean* fame, arrived at Scarborough to preside over the annual meeting he found the secretary (C. A. Cheetham) was in hospital at Malton as the result of an accident sustained on the previous day when coming to Scarborough on his bicycle. With an ornithological President who was out of touch with procedure and current business, I felt some responsibility, but with the aid of K. G. Payne and Cheetham's scribbled notes the dignity of the occasion was maintained. Alexander's address dealt with the work of the bird observatories in which we were particularly interested, only three years after the start of our own observatory near Kilnsea.

Other zoological nominees have been Professors A. C. Hardy (1942) and E. A. Spaul (1952), gentlemen with interests far too wide to be claimed as ornithological. Although E. W. Taylor (1956) in his address to the Union, surveyed and summarised mammalian records from the time of Roebuck and Clarke, his interests were always largely ornithological. He had served the Vertebrate Section faithfully as secretary for eighteen years with model minutes, and in 1946 was mainly responsible for the formation of the Yorkshire Naturalists' Trust Ltd. Alfred Hazelwood (1958) has been a faithful source of help in times of specific and subspecific trouble for many years. About these last two ornithological presidents I could say a lot, but they are still 'current'. Like some others they have regarded their years of office as stepping-stones towards further service.

Many others have given signal ornithological service to the Union, some of whom fully deserved the honour of the presidency. The bearer of a name older in the annals of Yorkshire natural history than the Union itself, James Backhouse (for long called J. Backhouse Junior) served the Vertebrate Section and the Union in several capacities, and published a useful *Handbook of European Birds* in 1890. Long after he left the county he would return on short visits and I once listened to him lecture in Rotherham on a journey in Iceland made some thirty years earlier in the 1880's, in company with F. C. R. Jourdain. R. M. Garnett chaired the Ornithological Section during most of the period of my secretaryship and was a great loss when he moved to Canada.

The name comes to mind of that fine, all-round zoologist, W. J. Clarke of Scarborough, who frequently addressed the Vertebrate Section and who collected North Riding records for so many years and reported on them. E. W. Wade felt he had to decline the presidency when he left Yorkshire; he had long collected East Riding records and had presented excellent reports. He was said to maintain his fitness as a tree and rock climber by ascending nightly hand over hand up a rope to his bed in the top storey of his house. The Butterfields, the Smiths of York, Charles Procter, Stuart Smith, W. R. Grist who so long edited *The Naturalist*, and many others I remember; they cannot all be named. Potential Presidents in the Ornithological Section to-day are plentiful—the honour can go to only very few.

In considering ornithologically the hundred years of the Union's existence several matters call for comment, notably the change from the times of private collecting of specimens to those of recording occurrences with detailed notes written at the time, and of securing quick confirmation of the facts if possible, and expert concurrence later. In the earlier years records often included the word 'obtained'; thus W. J. Clarke on Christmas Day of 1888 received a Black Redstart that had been 'obtained' at Cayton Bay. A Barred Warbler 'obtained' near Easington on August 28th, 1884, was the first for Yorkshire and the second for England, which illustrates how frequencies of some birds, and/or of observers, have changed in my life-time.

The Protection of Birds Acts Committee was set up in 1891, with several collectors on the Committee. One collector accepted membership with the expressed determination never again to take an egg in Yorkshire; a bargain I believe he honoured. Such a claim did not help another when prosecuted for taking protected eggs in an adjoining county, after hasty retirement from his membership. The mere formation

of the Committee did something towards the preservation of our rarities; but the attempt to prevent the disappearance of the Stone Curlew was unsuccessful. All possible influence was used to support the campaign for the Bill, subsequently an Act, to suppress the trade in sea-birds' wings, largely Kittiwakes' and Terns,' thousands of which were killed on the Yorkshire cliffs in the mid-Victorian era, and many Terns shot near Spurn. An advertiser in *The Times* as late as 1900 wanted to buy 10,000 Kittiwakes and Lesser Terns for supply to London milliners, which was then illegal.

Preservation has become our greatest need. Fifty years ago the Corncrake was still an abundant species all over the cultivated parts of the county. No one expected improved farming technique would mean the Corncrake's near obliteration. Modern farming may mean obliteration for other species, and comparative rarity for more. Poisoned weeds, poisoned insects, poisoned animals and birds, may damage irreparably the country-side that attracts so many by its beauty. I have often wondered that wild nature should be used pictorially on large magazine advertisements by the very firms who manufacture and sell poisons for use by farmers. Surely they know what damage their poisons are wreaking! I wonder, too, that parents, who may themselves not be without aesthetic tastes, can allow their irresponsible progeny to use wild birds as targets, and even provide them with guns. The very pressure of humanity upon wild nature may be destructive by mere disturbance. Week-end yachting and camping and fishing in the birds' breeding season cause desertion of nests and prevent eggs from hatching, and continually decrease the numbers of some species. Some foreign tourists come to England to see our birds; Americans who share our literature want to hear and see Shelley's Skylark and Keats' Nightingale.

Old numbers of *The Naturalist* form a valuable source of information concerning a huge variety of subjects, and make interesting reading. The editors had more space available before the two wars than to-day. 'The Ornithology of Tennyson' titled an article by the Rev. J. G. Tuck in 1893 which could hardly have been included to-day. I am reminded of an offer I made some years ago to prepare a paper on the poetical approach to birds for the Ornithological Section, which was not accepted; I thought the minds of those responsible for the programme needed a little broadening!

The Spurn-Easington area was kept well covered by Messrs. Cordeaux, Caton-Haigh, Hewetson, and P. W. Loten; and later by C. F. Procter, C. W. Mason and others, aided in the beginning of this century by visitors such as H. F. Witherby. Many of their notes resemble those of the bird observatory to-day; J. Cordeaux collected and edited them for years under the heading 'Humber Notes'. In 1891, 'Wheatears were very abundant from August 13th to 14th.' A considerable immigration of Robins took place from September 24th to October 7th, and on October 22nd they 'swarmed along the coast; I counted up to fifty in one part of the Warren House garden.' On the night of October 20th, Woodcocks arrived on the coast 'from Withernsea to Spurn in immense numbers.' Of the Robin, as of the Nightingale, Keats could have written 'no hungry generations tread thee down'; not so of the Woodcock. On the same day 'Goldcrests abounded'; and H. B. Hewetson reported 'twenty Grey Shrikes between Kilnsea and Spurn', and 'tens of thousands of Snow Buntings about Kilnsea. I never saw anything like it.' Easterly winds had prevailed.

Arguments concerning migration routes were sometimes quite fierce in *The Naturalist*. In 1894 Cordeaux protested against conclusions reached by visitors of a few days duration, saying 'continuous daily observation during the entire season' is needed; which we now try to provide at Spurn, so far as extraneous calls on the warden's time will allow. A note of 'four Black Redstarts near the Spurn Lighthouse from March 24th to 31st, 1894' has a modern sound.

Field meetings differed surprisingly little from those of to-day, but were reported much more fully. Even repetition was tolerated sometimes, as when E. R. Waite, reporting a meeting at Hayburn Wyke in 1891 in thirteen pages, twice described meeting a woman carrying a young Long-eared Owl; had a Long-eared Owl carried the woman it would have been doubly news at any date. After that meeting the return train to Scarborough was late, connections were missed and about thirty people were stranded. The report proceeds: 'After having exhausted their benedictions on the Railway Company, the enraged party left like a swarm of bees to seek accommodation for the night.' The Victorians could be direct, or could lead

imagination to play: before one meeting could be held, at 4 p.m., 'the calls of nature' had to be satisfied.

At this time *The Naturalist* published small detailed maps of the areas covered by excursions. One map that covered the Ferrybridge area on June 16th, 1894, shows Fairburn Ing; but the list of birds recorded for the day included no gulls, no Coots, or Reed-Warblers, and only one duck—a Mallard. Ferry Fryston was the main area explored. Space was so ample that 'Bibliography' became a frequent, if intermittent, feature, with references to articles and notes concerning all branches of natural history in turn in the north of England; that for birds in 1887 filled twenty-one pages. In 1900 more notes in some issues came from Lincolnshire than from Yorkshire; and twenty pages were occupied by a paper by Miss M. L. Arnett entitled 'The Birds of Rydal'. A modern difficulty is illustrated by the report of a supposed Ivory Gull nesting on the Farne Islands in 1906; investigation by H. B. Booth and Riley Fortune proved it to be a white specimen of the Lesser Black-backed Gull.

Publication of *The Birds of Yorkshire* in 1907 was not achieved without difficulties. Subscribers in advance (£1 1s. od.) numbered 250, which the publishers reported was insufficient to cover the cost; but they offered to supply each subscriber with a copy and to pay the Union £40 for the right to print further copies, and to assume the possible liability. There were no such difficulties concerning *Yorkshire Birds* in 1952.

Before increased costs of printing followed the 1914-18 war, illustrations in *The Naturalist* were fairly frequent. In one group photograph of a meeting at Flamborough in 1906, I can recognise W. D. Roebuck, F. H. Edmondson, Riley Fortune, E. W. Wade and H. B. Booth complete in bowler hat.

Of all the editors of *The Naturalist*, none equalled the late T. Sheppard in the use of sarcastic wit. Some of his book reviews were a joy to read whatever the authors thought. Of the published phraseology of a singing Nightingale in many syllables he commented, 'the last one we heard using such phrases ended up with *rats*.' Thomas Sheppard was Curator of the Hull Museum which had many good ornithological exhibits, including private collections donated to the museum. In spite of the vulnerable situation, the exhibits were not removed before the inevitable bombing of the 1939-45 war, and were destroyed.

I must leave a little space for more recent history. Ornithological meetings in Leeds, with well-illustrated evening programmes, have been attractive for more than fifty years in my memory. The afternoon meetings, when four people read separate reports of the year's events, often artlessly prepared and not always audibly to everyone, could induce slumber, as sounds sometimes revealed. The county was less well covered in those days than to-day. Prior to 1939 the afternoon audiences were small but more than doubled in the evening. I can't remember an evening meeting without slides or films. Whether the fact that the Kearnons were Yorkshiremen led to early emulation, or whatever the reason, among Y.N.U. members in this century there have always been leading photographic ornithologists who took both their bird study and their photography seriously. Riley Fortune and Jasper Atkinson were working as the century began, or before. Then everyone seemed to be using a camera. Some sustained first-class work over periods of many years and achieved national distinction, among whom might be mentioned T. M. Fowler, R. Chislett, A. Gilpin, W. W. Nicholas and H. R. Lowes, with such permanent immigrants as W. E. Higham, G. K. Yeates and J. Armitage. Among our early filmers of birds were V. S. Crapnell and G. R. Edwards (now of the Fuchs expedition to Antarctica), and W. E. Higham. All these and many others too numerous to name contributed frequently to our programmes; and the secretaries of the Vertebrate Section, E. W. Taylor, Rex Procter, and A. H. B. Lee and their predecessors, were able to attract honorary visits from experts in distant areas, almost anyone in fact excepting the one or two leading professional lecturers. An audience that had learned to appreciate first class work was guaranteed. The expected quality of the evening programmes which drew such audiences also attracted new members to the Union.

The great change to modern recording practice came in 1939-40, when our reports were first co-ordinated and edited as a whole. Records were accepted, after scrutiny for reliability, from other than Y.N.U. members and associates. Ornithologists in other areas, who visited Yorkshire, acquired the practice of sending notes of what they had seen. Reprints of the reports were issued to such contributors,

some of whom joined the Union, were exchanged for other regional reports, and were on sale to anyone interested for a modest charge. There is no doubt the yearly Ornithological Report has contributed considerably to the growth of the Section and of the Union.

Another milestone in our progress was the erection of the first ringing-trap at Kilnsea Warren by G. H. Ainsworth, J. Lord and their helpers, in the late autumn of 1945; and the establishment of the Spurn Bird Observatory following the lease of Warren Cottage granted by the War Department in early 1946: all would have come earlier but for the interruption of proceedings by the 1939-45 war. As people talked about our success, as our results were published, we found we were achieving notoriety outside Yorkshire. We had visits from people planning similar ventures elsewhere. Only two of the eighteen observatories now existing dated from before 1946, and both are on islands, with advantages of isolation which we had not.

From the beginning the Observatory worked under difficulties, which a distinguished Scot said long ago would have defeated any others than Yorkshiremen. Our landlords had their own difficulties following the end of World War II, but it was disconcerting to have permissions countermanded after they had been acted upon. A large Heligoland trap had to be removed from the Point after less than a year's successful life. It was kind of W.D. officers to consult us concerning the siting of new buildings—which however were than built elsewhere. All the time we had, and still have, to struggle against uninvited, undesired publicity, which sent down not only well-intentioned people, but larger numbers who had no interest in the flora and fauna and some of whom were capable of destructive vandalism. We persevered, and active work now continues throughout the year.

Our success has been considerable. Our own knowledge has been advanced and that of hundreds of other people, young and old, ranging from beginners to some who are prominent among British ornithologists. As training grounds, where beginners can meet experts, observatories are invaluable, lasting friendships are often made. There is, however, a little danger that some of those who have stayed for a week may magnify the importance of that week against the other fifty-one, and magnify too the value of the experience it has given them! Directors and organisers of other observatories have studied with us at Spurn in their earlier years. Ornithologists from other counties, other countries, other continents, have thought it worth while to stay with us for varying periods. We have added something to what is known of the movements of a large number of species. Species new to Yorkshire, even to England, have been recorded. These things have been achieved by careful observation, and ringing, and by accurate recording. Recoveries of birds ringed at Spurn have come from many parts of Britain, from many countries in Europe, from Iceland, and from North Africa. Patterns of some movements are becoming discernible. The collective, sustained work involved has been worth while, and has been enjoyed.

Since becoming secretary of the Section, R. F. Dickens has increased slightly the frequency and scope of meetings. In 1960 we changed to the vice-counties as areas for recording, and the authority I exercised as editor of the reports is being shared by a committee with A. J. Wallis as editor for 1961. The severely biological trend of modern ornithologists has not unduly affected us. We are still field-naturalists, field-ornithologists first, although ready to help (and be helped by) those studying special problems and by the curators of our museums. If our work helps towards solutions of problems of wide significance we are pleased. Migrationally almost every bird presents several problems, towards the solutions of which the Spurn Bird Observatory, the watchers at Teesmouth, Flamborough, Fairburn, Gouthwaite, Knaresborough, and elsewhere, including those who watch and ring in their own localities, in their own gardens, all have contributions to make.

The Yorkshire Naturalists' Trust Ltd., formed in 1946 to hold properties of interest to naturalists, became of wider than county significance when it purchased the Spurn peninsula in 1959. We had been active there for long years already; and were of good repute with our War Department landlords, who, like many other people, hardly distinguished between Union and Trust. Confident we should be better off with the Trust as landlords we gave every assistance, financial and otherwise, we could to further the purchase. All this the Trust has recognised; but the similarity of names causes confusion. May I commend the matter for consideration by those members of both bodies who can take the long view; and who have at heart the welfare of our wild flora and fauna, and of both Union and Trust Ltd., and of the individual naturalists.

BOTANICAL RETROSPECT

W. A. SLEDGE

IN his presidential address to the Y.N.U. at Scarborough in 1922, Dr. T. W. Woodhead chose as his subject 'Botanical Survey and Ecology in Yorkshire'. In it he dealt in some detail with the rise and progress of botanical field studies in the county; his bibliography of 120 titles being some indication of the width of his survey. His was not the first presidential address to the Union to be concerned with Yorkshire botanists and their achievements. At Barnsley in 1884, J. G. Baker gave an admirable account of the early history of botanical exploration in Yorkshire. The story starts with the herbalists of the Tudor period, passing on to the contemporaries and correspondents of John Ray and Dillenius and thence to the early English disciples of Linnaeus. This account covers the period from 1550-1800 and remains a very useful source of information about the early pioneers of botanical investigation in the county.

The botanists of pre-nineteenth century days were a select and privileged few with the means to pursue their interest, or else professional apothecaries. But early



in the nineteenth century the study of natural history gained ground rapidly. Societies with broadly cultural interests, usually styled Literary and Philosophical Societies, began to spring up throughout the country. During the second decade such societies were founded at Leeds, York, Hull, Sheffield and Whitby; and these were followed later by the formation of an ever-increasing number of local natural history and scientific societies. Conditions had changed. The spread of popular education and the network of railway communications which had come into existence both combined to attract more and more workers into the field. As Gilmour has put it: 'The second quarter of the nineteenth century saw the horse-borne pioneer with a Latin treatise in his saddle-bag capitulate before the growing bands of top-hatted Victorians entrained for a week's excursion to the Lizard or Teesdale armed with the latest Floras of Lindley, Hooker or Babington.'

The goal towards which many of these enthusiastic amateur botanists strove was the production of a local or county Flora. It was a logical end-point to their activities and it still remains a peculiarly British expression of botanical field work. Few English counties are now without their published Flora and Yorkshire is surely unique in having in addition to Floras of all three Ridings, separate Fungus and Alga Floras and recent accounts of the bryophytes and lichens of the county.

It was to an employee of the Yorkshire Philosophical Society, Henry Baines, that we owe the first Flora of Yorkshire. This was published at Halifax, the author's birthplace, in 1840, though Baines was then living at York where, after first being employed by the nurseryman James Backhouse—one of the foremost amateur botanists of his day—he became curator of the garden owned by the Yorkshire Philosophical Society and subsequently sub-curator to the Society. The Society

had in its possession the best existing collection of Yorkshire plants, much of it contributed by Backhouse senior, James Dalton and W. Middleton, and Baines was able to draw on this and on local lists submitted by a considerable circle of correspondents throughout the county. To what extent his own field work contributed is not apparent.

Fourteen years later an enlarged Supplement to Baines' Flora was published, J. G. Baker being responsible for the vascular plants and John Nowell for the mosses. H. C. Watson's *Cybele Britannica*, which so greatly influenced systematic botany in Britain, had by this time been published, and Watson's types of distribution and grades of citizenship were adopted in the new introduction which Baker wrote for this Flora. His competent essay on the vegetation of the North Riding considered in relation to physical geography and the very numerous personal notes and records incorporated in the main body of the work, are all the more remarkable when we reflect that the volume was completed and published before Baker had reached his twenty-first birthday. He had already contributed a number of papers and short notes to the *Phytologist*—the first when he was fifteen years old—and these included 'Contributions to British Lichenology' as well as sundry notes on flowering plants, including Yorkshire hawkweeds and brambles.

J. G. Baker quickly became recognised as one of the leading amateur botanists of his day and for the next decade he was the dominant figure in Yorkshire botany. He was no doubt largely instrumental in founding the Thirsk Natural History Society in 1853. The Society was formed 'for the purpose of organising and developing the scientific exploration of the vicinity. The members meet once a month for consultation, discussion and the exhibition of specimens . . . A manuscript notebook goes the round of the members once a month, in which from time to time they record their observations. The Society possesses a tolerably good microscope and library of reference . . . Mr. John G. Baker is the President.' Within a few years this Society took over the functions of the Botanical Society of London which had been languishing for some time and which wound up its affairs in 1858. The distribution and exchange of specimens which had been one of the principal activities of the defunct Society was started again from Thirsk and for the next few years until Baker's departure from Yorkshire, the Thirsk Natural History Society became the headquarters of amateur botany in England. From 1858-60 its meetings were regularly reported in the *Phytologist* and the records of new members enrolled include many of the foremost botanists of the day from all parts of the country.

Some years ago a friend at Kew gave me a photograph of the Thirsk Natural History Society which had belonged to Baker, for the members' names are entered in his handwriting on the back where the photograph is dated as 'about 1858'. It shows J.G.B. as a handsome young man, quite unrecognisable as the same bearded figure shown in the two familiar pictures of him taken many years later at Kew. He stands in the centre of the group in a Napoleonic attitude with William Foggitt on his right and J. H. Davies the bryologist on his left. The remaining eight members are names only though the *Phytologist* reports enable us to identify Mr. R. C. Carter as the secretary and Mr. Packer as librarian.

Baker must have dominated the Society for the reports in the *Phytologist* are almost entirely taken up with his communications and exhibits at its meetings. The only other member whose contributions to proceedings are reported was J. H. Davies. Even William Foggitt, who was Baker's most frequent companion on excursions and an excellent field botanist, goes unreported. It is small wonder that the Thirsk Natural History Society soon perished after Baker's removal from the county.

William Foggitt (1835-1917) was, as his son T. J. Foggitt recalls (*Rep. Bot. Soc. and E.C.*, 1932, 289-297, 1933), a man of unusual parts. 'Of wide and varied learning he read his Bible both in Greek and Hebrew and could quote the Latin and English poets at any length.' For him, too, natural history was an absorbing hobby and though he and his friend Baker both had their livings to earn in their fathers' businesses in Thirsk, Foggitt as a pharmaceutical chemist and Baker in a general drapery and grocery stores, they contrived to cover an astonishing amount of ground on their botanical rambles. Marathons would be a better description of some, for on one occasion as T. J. Foggitt recalls they were finally benighted after a prodigious walk 'the mere distance by road was a good 40 miles (with some tremendous hills in them) quite irrespective of all the botanising *en route*.'

These years of intense activity culminated in the publication, late in 1863 of

North Yorkshire. It was a Flora differing from others of its kind in the far greater space devoted to soil, physical geography and climate and their influence on vegetation; indeed the chapters on these subjects together with the descriptive account of the topography and flora of the several river basins used as botanical districts take up more than half the volume. Though published by Longman Green this work was printed in Thirsk and only a limited number of copies had been sent out to subscribers when the entire edition, together with his library and herbarium, was lost in a disastrous fire which completely destroyed Baker's house. T. J. Foggitt (*loc. cit.* 296-297) has vividly described his childhood memories of that disastrous fire witnessed from his grandparents' house across the market square. His friends did all they could to make good the loss, responding generously to an appeal. My own volumes of Grenier and Godron's *Flore de France* contain printed slips attached therein with the words: Purchased by J. G. Baker from a fund subscribed by his fellow botanists to replace his library when it was destroyed by fire, May, 1864. But it proved a turning point in Baker's career for his shop as well as his house had been destroyed. A fresh start had to be made and a business life had little appeal. His reputation however as a botanist was now firmly established and he was offered an appointment at Kew and left Yorkshire early in 1866 to begin his distinguished career as a professional systematist on the staff of the Royal Botanic Garden.

By this time the body which was later to become known as the Yorkshire Naturalists' Union had come into existence though it was not until December 2nd, 1876, that the Botanical Section was formally instituted. The Section held its first meeting at Pontefract on April 2nd, 1877, Mr. Joseph Wainwright, F.L.S., an alderman of Wakefield and editor of the short-lived *Yorkshire Naturalists' Recorder*—the Journal of the West Riding Consolidated Naturalists' Society—acted as President until the first Annual General Meeting of the Section which was held in Wakefield on October 6th, 1877. The Rev. W. Fowler (1835-1912) at that time Vicar of Liversedge, was then elected President of the Section and occupied that position for the next two years and again in 1886. He was a versatile naturalist with wide interests; a competent bryologist, an enthusiastic mycologist (he was one of the select group of mycologists who later founded the British Mycological Society), and the discoverer of *Selinum carvifolia* in Britain.

The Section was vigorous from the very moment of its birth for it had a most able and energetic secretary in Dr. H. Franklin Parsons, Medical Officer at Goole, who along with C. P. Hobkirk of Huddersfield had been appointed as the nucleus of the original committee with power to add to their number. Unfortunately Dr. Parsons left Yorkshire two years later, but during those two years no one did more to fashion the section's activities and set the standard of its work. When he left the county the Union recognised his services by electing him its first Honorary Life Member. In the first dozen years of its existence the Section held its annual meetings in Wakefield, Leeds, Huddersfield, York, Bradford, Selby, Barnsley, Doncaster, Beverley, Dewsbury, Malton and Sheffield.

Already the circle of affiliated societies had spread widely beyond its original centre in the West Riding. There was an evangelistic zeal about these early Y.N.U. meetings. In 1880-1881 W. C. Williamson, the distinguished palaeobotanist and Professor of Botany at Owens College, Manchester, was President of the Union which he refers to as 'one of the most influential and energetic of the many scientific institutions which exist in the country.' He was a Yorkshireman, born at Scarborough, and in his autobiography, *Reminiscences of a Yorkshire Naturalist* (1896) he recalls how when he was President of the Y.N.U. one of the field excursions was held at Malton 'where there was as yet no Society, but being among friends, and as there was in the town a small museum sustained by a few active naturalists, I had no difficulty in persuading the Maltonians to establish such a branch. They only consented to do so on condition that I would become its President, which I promised to do. This, of course, involved my running over to Malton from time to time to give the young Society an address on some scientific subject.' It was to the dedicated enthusiasm and energy of such people, who thought little of 'running over from time to time' from Manchester to Malton to address a newly-formed natural history society, that the vigorous expansion of the Union was due.

The first annual report of the Botanical Section was a modest review of the more interesting species observed during the years' field excursions, all of them held in the West Riding. Although the report deplores the fact that workers in cryptogamic botany were 'less numerous than the committee could wish', lists of algae and

fungi figure in this report as well as flowering plants and bryophytes. The second report was much enlarged with long lists of new and noteworthy records covering all groups. To this also was appended an important paper on the moss flora of the East Riding by Dr. Parsons and one on the liverworts by Richard Spruce; also a paper by Dr. Parsons on 'Problems of Plant Distribution' which dealt with species in relation to soil types. William West and Dr. F. A. Lees edited the next two reports after which editorial and secretarial functions were shared by G. E. Masee, P. F. Lee, and M. B. Slater, a trio in whose capable hands fungi, flowering plants and bryophytes were all well cared for. The collected reports and proceedings of the Botanical Section from 1877-1888 were issued in 1891 as volume I of the Botanical Transactions of the Y.N.U. The reports contain much of interest and the papers include J. G. Baker's presidential address referred to in my opening paragraph, H. H. Slater's *Flora of Ripon and Neighbourhood* and Phineas Fox Lee's *Flora of Dewsbury and Neighbourhood* and the *Supplement* thereto. The Rev. H. H. Slater was another naturalist of unusually wide interests. He was a first-rate ornithologist and President, in 1881, of the Vertebrate Section of the Union. In 1874 he had been naturalist to the H.M. Transit of Venus Expedition to Rodrigues where he discovered and brought home a great number of bones of the Solitaire and saw what was probably the last surviving specimen of the endemic Ringed Parakeet. Some interesting articles on the fauna of Rodrigues were contributed by him to *The Naturalist* in 1880-1881.

The analytical treatment of the flora in *North Yorkshire* furnished the model followed fifteen years later (1878) by the geologist and one-time Mayor of Halifax, J. W. Davis, and Dr. F. Arnold Lees in *West Yorkshire*. Its subtitle 'An account of its Geology, Physical Geography, Climatology and Botany' is virtually identical with that of Baker's work and it was appropriately dedicated to J. G. Baker and W. W. Newbould. In 1888 there followed Lees' *Flora of West Yorkshire* which was issued as the second volume of the Botanical Transactions of the Y.N.U. It was the most comprehensive work of its kind which had so far been issued in this country for it embraced every group of plants, the records covering in all 3,160 species—a monument both to the industry of its author and to the enthusiastic co-operation of his many contemporaries and helpers.

Dr. F. A. Lees (1847-1921) was born and died in Leeds though he practised his profession for short periods in several other centres—Hartlepool, Middleton-in-Teesdale, Wetherby, Thorner, Birstall and Market Rasen—and some of these were no doubt chosen for the botanical possibilities which they afforded. He was a methodical worker, every outing was recorded with a list of plants observed, and his interests included entomology and ornithology as well as botany. His notebooks—many of them in my possession—contain a wealth of information for plants sent by correspondents and extracts from books and newspaper cuttings were all included. As a schoolboy I used to call on him, taking specimens for identification or displaying some treasure from a recent excursion. I recall his cry of 'The bee! The bee! I never thought I should see that again' when a few months before his death I proudly produced my first bee orchid. The contents of my vasculum would be duly listed in his neat handwriting and my Latin pronunciations corrected if they offended him. It is a surprising fact that Dr. Lees was never elected President of the Y.N.U. It is difficult to believe that he was never nominated.

After the publication of the *Flora of West Yorkshire* Lees became the recognised authority in the county to whom records were submitted and these were collected together and formed the basis of a voluminous new manuscript work entitled 'The Vegetation of Yorkshire'. In it much space was devoted to speculations on the 'assurgent' or 'declinent' status of each species and the ecological connotation of the title was misleading. The work was much inferior to his earlier *Flora* and like his writings in *The Naturalist* suffered from the florid phraseology and eccentricity of style which he affected in all his later writings. There was never any real hope of its being published in the form in which its author cast it and it became a source of embarrassment to the Union during his lifetime. Eventually the records were extracted by C. A. Cheetham and published in 1941 as *A Supplement to the Yorkshire Floras*.

J. Fraser Robinson's *Flora of the East Riding of Yorkshire* was published in 1902 and sponsored by the Hull Scientific and Field Naturalists' Club. It was planned on a less ambitious scale than the others. The area covered is far less varied in topography than the North and West Ridings and even at the time of publication

over 70% of the Riding was under cultivation. The figure is now substantially higher and little natural vegetation remains; even so the flora contains many interesting species and there is still scope for investigation as is shown by the finding of three species new to the vice-county (viz. *Oenanthe fluviatilis*, *Cladium mariscus* and *Calamagrostis stricta*) in the last few years.

Meanwhile publication of the second edition of J. G. Baker's ill-fated Flora of North Yorkshire had begun in the Transactions of the Y.N.U. The introduction and systematic part covering the flowering plants were issued in 1888 and 1892 and the volume was completed in 1906 with a full account of the mosses and hepatics prepared by Matthew B. Slater. The bryological supplement formed the chief difference between the later and earlier volumes, there being few changes or additions to the sections dealing with phanerogams and pteridophytes. This work formed the third volume of the Botanical Transactions of the Y.N.U. and together with the earlier volumes and with Masee and Crossland's *Fungus Flora of Yorkshire* and William West's *Alga Flora of Yorkshire* which were issued as the fourth and fifth volumes in the Botanical Series of the Union's Transactions it forms one of a group of works of which the Union can justly feel proud.

Present-day botanists who turn to the Floras of the three Ridings as the standard sources of information about plant distribution in Yorkshire would do well to remember that much of this information was of necessity condensed from more detailed records, reports and articles which appeared in *The Naturalist*. One of these articles of particular interest and importance is James Backhouse's 'Teesdale Botany: Historical and Personal Recollections' (*Nat.*, 1884, 10-13). In it he makes clear how the credit for the original discovery of so many of the Teesdale specialities properly belonged to the Middleton lead miner John Binks with whom his father in 1810, first botanised in that unique area. The dates of his own and his father's numerous additions to the Teesdale flora are recalled, including that second station for *Viola arenaria* to which Professor Valentine referred in his address to the Y.N.U. last year. Of *Saxifraga hirculus* he says: 'Some years later when crossing the moors alone I found another station for *S. hirculus*. It was growing in vast profusion covering more or less, an area probably as large as that of all the other stations I have seen put together. No one I believe has visited the locality since. I now know of nine stations for this plant in the Teesdale district. Six of the nine I have personally discovered.' Though even the Backhouses did not exhaust the botanical riches of Teesdale it is improbable that of the hundreds who have since visited the area any have ever known it quite so thoroughly and intimately.

At the turn of the century a new interest was developing. The first English vegetation surveys were published in 1903 by Messrs. Smith, Moss and Rankin (*Geog. Journ.* 1903). These consisted of descriptive ecological accounts of the vegetation of the Leeds and Halifax and the Harrogate-Skipton areas, accompanied by half-inch-to-the-mile maps showing the distribution of the principal types of vegetation in distinctive colours. The following year F. J. Lewis published similar accounts and two one-inch-to-the-mile vegetation maps (*Geog. Journ.* 1904) of the upper reaches of the Tees, Eden, Wear and Tyne. These covered Stainmoor and Upper Teesdale. Additional memoirs by Woodhead, Crump, Moss and Elgee dealing with the Huddersfield, Halifax, Peak District and Cleveland areas contributed substantially to the rapid progress which ecology was making in the country. The British Ecological Society, which was founded in London in April 1913, was a direct descendant of an earlier body entitled 'The Central Committee for the Survey and Study of British Vegetation' which had come into existence in December 1904 at a meeting held in Dr. W. G. Smith's house in Leeds, attended by Moss, Tansley and Woodhead and having the support of Lloyd Praeger, Lewis, Rankin and others. Contributions to *The Naturalist* thereafter frequently dealt with ecological problems or described areas visited by the Union in ecological rather than floristic terms; Woodhead and Pearsall being the ecologists whose articles figured most frequently.

Throughout most of the life of the Union the five general excursions planned to include each vice-county each year, with a printed circular of information issued to all members beforehand, have been a central feature of its organisation. The character of these field excursions has changed little over the years and I doubt if any who participate would view with favour any move to modify substantially the traditional pattern. Newcomers in all sections have found them of great value as occasions on which they met and learnt from those with greater experience. Good naturalists are never seen to greater advantage than on field excursions and it is

impossible to estimate how much succeeding generations owe to such outstanding field naturalists as William West, Chris. Cheetham or W. H. Burrell. Each section has produced its own experts and their far-reaching influence during excursions has been a potent factor in the maintenance of the Union's appeal to field naturalists.

There is a great fund of information in past Y.N.U. excursion reports which make interesting and occasionally amusing reading. They mirror the changes in places revisited over the years and they are sometimes revealing in other ways, for we can often glean from them something about botanists as well as botany. The record for length of any botanical report must surely be that of the Bowes meeting of 1903 which runs to ten and a half pages in a report occupying twenty-four pages with three plates. The writer of this portmanteau report was John Farrer, evidently a formidable character who, so says his obituary, 'insisted on being so addressed on all occasions, Mr's and Esq's he abominated . . . More than one over-enthusiastic collector has received such a "dressing-down" from John Farrer, that they will remember it to the end of their days.' The preamble to his botanical report contains the following: 'Bowes is delightfully quiet and peaceful and I pray God that it will for ever remain so. The motor car—the latest curse inflicted upon the country—is comparatively rare. I used to have a contempt for cyclists, now I am beginning to respect them. They glide along noiseless and stinkless, and comparatively dustless, and the tinkle of their bells is heavenly music compared with the horn of the motor.' Editors were more lenient in those days. They tolerated—and perhaps approved—of occasional poetic outbursts and expressions of personal prejudice as appropriate accompaniments to biological reporting. One shudders to think of John Farrer's language had he been on the 1959 Bowes excursion when those luckless members of the party who had rooms facing the main road spent a disturbed night punctuated throughout by the crescendo, the grinding gear-change, then the diminuendo of heavily-laden lorries ceaselessly passing by the same hotel.

In recent years the botanists at all field meetings have co-operated in the mapping scheme sponsored by the Botanical Society of the British Isles, a co-operation which has been of benefit to the participants as well as to the scheme. There is still ample scope for further work on these lines in Yorkshire, for many areas are still only superficially covered and continued mapping for a number of years will be required before distributional data for Yorkshire plants approach completeness. A definite objective of this kind on an excursion adds interest and purpose to field work.

Other projects have occupied the botanical section from time to time. Forty years ago peat investigations were to the fore. C. A. Cheetham and W. H. Burrell published papers in *The Naturalist* on this work. Heather-moor ecology and the autecology of Juniper are other topics which have interested the Section and formed subjects for papers in *The Naturalist* by C. A. Cheetham, A. Malins Smith, Miss D. Hilary and others. Where frequent contacts and continuity of field work are possible observations of real scientific value can be made by local Societies, as was demonstrated at Ilkley in December 1960 by the exhibition illustrating the survey work by the Wharfedale Naturalists on Ilkley Moor and their paper on the ecology of Crowberry published in *The Naturalist* earlier this year.

The organisation of sectional work on specific problems presents difficulties when members are widely scattered throughout the county, but other Sections have carried out planned schemes of co-operative investigation and some project to which contributions can be made by all members of the Section is of great value not only in increasing knowledge and giving direction to field work, but also in increasing cohesion and a sense of purpose in the Section itself. In botany as in other branches of natural history there is fortunately never likely to be an end to the useful contributions which can be made by persistent and accurate observations in the field. While the Botanical Section can look back therefore with justifiable pride on the achievements of the past century it must also look to its future activities.

THE ENTOMOLOGICAL SECTION AND THE STUDY OF YORKSHIRE INSECTS

J. H. FLINT

'To study and record the insects of the county and to promote the interests of entomology by friendly intercourse between entomologists of all kinds.' So Dr. Hincks to the present writer when handing over his job as honorary secretary of the Entomological Section as guidance for deciding what should be the legitimate concern of the Section. How well and how widely this has been interpreted down the years can be seen in the records and membership, for almost all orders of insects are covered by detailed records maintained by a team of recorders, records which have come down from their predecessors in their special fields, while few indeed have been the active field entomologists in the county who have remained outside the Section.

The Entomological Section was born on December 2nd, 1876, meeting for the first time at Pontefract the following April when the Union met in Sections according to the interests of members, along the lines of the meetings arranged by the British Association. From this year dates the co-ordinated study of Yorkshire insects. They were hard working collectors, these nineteenth-century entomologists, and they early set about the compilation of records of the insects of the county, their ultimate aim being the production and publication of county lists. They had plenty



of scope, for it was possible to write in advance of an excursion to the Washburn Valley that only four insects were known from that valley, and it may be remarked that, the excursion being affected by rain, not many more were known after it.

The butterflies and moths, always popular, naturally attracted the greater number of members and the first President, William Prest of York, and the first Secretary, George T. Porritt of Huddersfield, were both lepidopterists. Indeed, the lepidopterists formed so large a proportion of the members of the Section that it was evidently not considered necessary to establish a Lepidoptera Committee when the other committees for research (Coleoptera; Hymenoptera, Diptera, Hemiptera; Neuroptera, Orthoptera, Trichoptera; Arachnida) were formed, and a proposal by William Hewett and W. Denison Roebuck that a Lepidoptera Committee be formed was turned down by the members (10—5) in 1913 although in 1916 these gentlemen were evidently more persuasive and their proposal, when repeated, was accepted. But the county always possessed some energetic students of what Roebuck regularly referred to as 'the neglected orders' and in 1881 E. B. Wrigglesworth, whose early death at the age of 34 was a great loss, became Secretary. He was a keen coleopterist and in his first year as Secretary produced a very competent summary of the year's work in his report for the Entomological Section. Reading it today one can sense his enthusiasm for his beetles, for scorning the excuses made by some of his successors, nailing his colours to the mast, he roundly declared, 'All seasons come alike *acceptable* to the coleopterist who is attentive to his studies; wet or dry, it does not much matter. No complaint of non-success owing to . . . etc., can possibly be permitted, for in this order the life histories are as variable as the weather . . . by experience I am alone [*sic*] persuaded that it is only the fault of he who undertakes the performance of it that success does not better attend his exertions.' Later recorders clearly did not always agree with him, but some of us have a sneaking feeling that, taking the Coleoptera as a whole, Wrigglesworth may well have been quite right.

The first fruits of the Section's activities were not long in appearing, and in the first year of its existence Roebuck commenced publication of a list of the Yorkshire Hymenoptera in the *Transactions* of the Union. Roebuck was not an outstanding entomologist but was a very keen exponent of the desirability of recording and publishing accounts of the insects of the county, and careful of the validity of the records which he published. Although insects were but one of his many interests he was a constant attender at Section meetings and one of the most influential of the members. The Hymenoptera list was necessarily very incomplete, but in 1883, again in the *Transactions*, the first part was published of Porritt's very fine list of the Yorkshire Lepidoptera which, when completed, recorded 1,341 of the then British total of 2,032 species. The list ran to two editions and alone would have sufficed to perpetuate his memory, but Porritt was one of the outstanding figures in Yorkshire entomology. A founder member of the Union and a joint editor during the first years of *The Naturalist*, he was an active member of the Entomological Section for fifty years and its Life President during the last eight years of his life. A keen worker himself, always ready to help and encourage others, his interests wide (he studied Dermaptera, Orthoptera and Neuroptera and was an authority on Trichoptera besides the Lepidoptera for which he is now best remembered), his fame was national and he was a member of the editorial board of the *Entomologist's Monthly Magazine* and of that very select circle, the Entomological Club.

The Coleoptera in Yorkshire had received attention from a number of competent collectors, and in 1886 the first part of 'A list of the Coleoptera of Yorkshire' by the Rev. W. C. Hey was published in the *Transactions of the Yorkshire Naturalists' Union*. Hey's list appeared in instalments but was never completed and did not progress beyond the Staphylinidae, but it was a beginning. Being incomplete, it never achieved the fame of Porritt's list.

This period of accumulation of records culminated in the entomological section of the first volume of the *Victoria County History of Yorkshire*, published in 1907. Roebuck was responsible for the Hymenoptera, and Porritt the Lepidoptera. Again, Roebuck's list reflects the paucity of students of that order. The Lepidoptera list, however, despite the number of active collectors, only added 43 to the earlier list in the *Transactions* of the Union, an indication of how thoroughly that early list had been compiled, for the County History list included 64 per cent. of the British Lepidoptera. Porritt's interests, as mentioned earlier, were not restricted to the Lepidoptera, for he also wrote the useful accounts of the Orthoptera, Neuroptera and Trichoptera. The section on Coleoptera, which listed 1,707 species, was compiled by M. Lawson Thompson and E. G. Bayford. Naturally, some sections are better than others and it was probably due to such attractive localities as the ponds of Askham Bog, all of which lay, alas, outside the area now owned by the Yorkshire Naturalists' Trust and many of which have disappeared, that 75 per cent. of the British water beetles (Hydradephaga) were included. The record sheets used by Lawson Thompson in this work are still in use. After his death they passed into the possession of G. B. Walsh, later to become recorder for Coleoptera, who added to them summaries of the beetle records of Dr. W. J. Fordham, and the many records of the 1940's and early 1950's. Passing through the hands of subsequent recorders, these sheets are once again being used in the compilation of a new list of the beetles of Yorkshire.

The *Victoria County History* included a list of the Yorkshire Diptera by Percy H. Grimshaw, and the only major orders not covered were the Hemiptera and the Ephemeroptera. The Hemiptera were dealt with by a list of the Heteroptera (1921) and Homoptera (1922) published in *The Naturalist* by Dr. W. J. Fordham and no account of Yorkshire entomology could omit his name. Ill-health restricted Fordham's field work and he devoted himself to the compilation of indexes to the insects of Britain and Yorkshire in particular. At his death in 1942 these covered all the orders except Lepidoptera and Apterygota and occupied a twelve-drawer cabinet containing several thousand cards, besides an overflow of hundreds of cards, eight full loose-leaf books, and over twenty journals and note-books and a mass of manuscript lists. These records, now the property of the Union, are dispersed among the recorders of the various orders so that they may be maintained continuously up-to-date, and they form one of the most important sources of knowledge of the distribution of Yorkshire insects. The Ephemeroptera was the last order to be covered and this was compiled by John R. Dibb and published in the revived *Transactions* in 1945. With its numerous and varied lakes, streams and rivers,

Yorkshire lists of aquatic orders have always contained a high proportion of the British species and this list recorded 37 out of the 47 possible.

In this account of the activities of the Entomological Section the emphasis has been laid on the production of county lists of the various orders, and naturally so, for this is the end to which members have chiefly co-operated. This was not necessarily the principal aim of the work of many of the Section's outstanding members however, and the county lists which resulted, in some of the smaller orders particularly, were the by-products of work concerned with the biology of the insects rather than with their distribution. Notable in this field was the study of the fauna of the Yorkshire streams and rivers by Prof. E. Percival and Henry Whitehead and their list of the Ephemeroptera which appeared in the *Entomologists' Monthly Magazine* in 1927 and Whitehead's list of Plecoptera in *The Naturalist* of 1929 were by-products of their biological studies. Similarly, Thomas Stainforth's paper on the 'Reed beetles of the genus *Donacia* and its allies in Yorkshire' in *The Naturalist* of 1944 contained a detailed account of the distribution of these beetles although Stainforth's primary interest was in their biology. His paper was a notable contribution in this field and stimulated a good deal of further work on these beetles.

Many members also who have contributed to our knowledge of Yorkshire insects have devoted much of their time to the assistance of beginners, both in the field and by naming and checking material. John Dibb went further and his *Field Book of Beetles* (1948) was an attempt to provide the beginner with a book that would bridge the gap between the popular insect book and the standard works, a difficult task in so large an order and where closely allied species are so superficially similar. The method was novel and not wholly successful, but there can be no doubt of the usefulness of *A Coleopterists' Handbook* which he edited in conjunction with G. B. Walsh, an experienced coleopterist who was for many years recorder of this order for the Section. Mr. Dibb's departure from the county was one of the many blows which the Section has suffered since the war.

The systematic recording of insects over the whole county has recently been supplemented by the investigation of the insects of two limited areas, Spurn and Malham Tarn, and this activity brought something new and very fruitful to the Section. A report on Spurn has been published already: in it are listed 1,670 species of insects besides 195 species of other invertebrate orders. A report on the insects of Malham Tarn should be in the press by the time this article appears. This work owes much to the initiative and effort of Douglas Hincks. Each year since 1947 a party of entomologists from the Section, sometimes accompanied by visiting entomologists and zoologists, has spent a period of seven to ten days collecting and recording insects in one of these two localities, until in 1959 the party transferred its attention to the sand dunes of Lancashire at Freshfield. The published work is one result of this effort; another is the sense of unity that has been created in a nucleus of entomologists who have lived together and worked together for so many years on the same projects. They did live together, sometimes so closely that sardines and tins came irresistibly to mind, and they worked so that it was not unknown for the sun to be rising as the previous day's work ended. In all this Douglas Hincks was the guiding star, the acknowledged leader, encouraging, stimulating and directing, taking great care that new recruits should feel 'at home'.

The activities at Spurn have become almost legendary—the gargantuan meals provided by our hostess at the café, Carrie Leonard, who viewed with disfavour anyone who could not dispose of all she provided; the tremendous voice of Douglas Hincks summoning members of his team; the indescribable confusion created by ten men living and mounting insects in one small room and drinking an endless succession of cups of tea. The idiosyncracies of individual members and the mishaps that befell them are regularly recalled; the member who, rather than face an outraged Carrie, invariably disposed of half his dinner through the window behind him while the hens, who always seemed to be waiting for this, clamoured their approval; the plaintive plea for advice from one who kept appearing from the darkness one night with an uncommon female moth, rather rubbed, and whose dilemma was whether to kill the moth in the hand, or wait for it to lay eggs (if it would) and have the brood in the bush. But Spurn will be inseparably linked with the memory of Douglas Hincks in the minds of many entomologists.

Until 1919 it had been the custom to elect a new President for the Section each year but in that year Porritt was elected Life President and so remained until his death in 1927. Since that year three distinguished entomologists successively have

occupied the position (latterly designated Chairman), J. M. Brown, E. G. Bayford and W. D. Hincks. There has been a similar continuity in the office of Secretary where, when Ben Morley resigned after fifteen years in 1924, first T. B. Kitchen and W. D. Hincks jointly, then W. D. Hincks alone occupied the post until 1953 with the exception of a brief spell from 1938 to 1942 when M. D. Barnes, later to lose his life while minesweeping at the end of the war, held office.

Probably this continuity has helped to maintain the constant pattern of the meetings down the years—the annual meeting for the election of officers, the reading and discussion of reports and, most interesting to many, the exhibition of members' specimens; and in many years, the annual field meeting. Changes have been largely those of form, the friendly informality of Dr. Hincks in the chair contrasting with the days when Mr. Porritt, the courteous Edwardian gentleman, presided over meetings in a frock coat. Nor was Porritt alone in that garb. One thing which has not changed is the readiness of the older, competent member to assist the novice. The writer remembers with gratitude the help he received from Dr. Hincks; Mr. Kitchen recalls the hospitality and encouragement he and Dr. Hincks received in their early days from Dr. Croft, Mr. Porritt and others. And so we could go on.

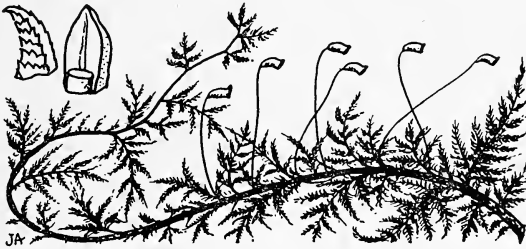
Any attempt to name the outstanding entomologists who have taken their part in the affairs of the Section would be apt to produce an invidious selection. But it is impossible to omit E. G. Bayford, Honorary Life Member and Past President of the Union, for many years President of the Section and doyen of Yorkshire entomologists, experienced and authoritative coleopterist and, with M. Lawson Thompson, compiler of the county list of beetles in the *Victoria History of Yorkshire*. Equally impossible to forget quiet self-effacing John Wood who probably never named an insect in his life but whose patient collecting—and he knew how and where to find insects that eluded others—and most beautiful mounting of insects of several orders produced annually a crop of material for other workers to use that resulted in not a few species new to science. Nor can we possibly omit one who has been described as 'the most able Yorkshire naturalist of his generation', James Meikle Brown, a world authority on the neglected and primitive Collembola, student of freshwater insects and sawflies and compiler of the records of the Yorkshire Hemiptera, who was an excellent field botanist as well as entomologist. Can the botanists or the entomologists claim as their own the unique Chris. Cheetham, whose Diptera records vie with Fordham's and whose name is perpetuated in the insect he found (*Tipula cheethami* Edwards), a member of his favourite family, the craneflies? And the others, the competent entomologists, including authorities in their own special fields, the novices, anxious to learn and to show that they could profit from what they learned so that they in turn became the competent ones, and those whose interest blazed brightly for a few years and then faded so that they drifted away—all these have contributed something to the strength of the Section and it is impossible to mention them all here. Many passed away in the fulness of years having made great contributions to the work of the Section. Others, and we may recall Robert Procter, a keen and hard-working lepidopterist and one of the very few who in recent years have tackled the smaller moths, and Maurice Barnes, a competent coleopterist who was extending his field to other orders and who would certainly have been one of the foremost of contemporary entomologists in the county, died before they reached their full power. Now, in the centenary year, Douglas Hincks, one of the greatest and most distinguished of them all, for many years the acknowledged leader of the Section, as Secretary or Chairman, is tragically taken away, leaving a gap that cannot be filled and will long be felt.

With over 20,000 species of insects to study the Section has often resembled a federation of allied interests where individuals are likely to be more familiar with flowering plants or birds than with their fellow entomologists' particular insects and it is an attitude of mind and a similarity of method held in common rather than a community of subject interest that unites the members. The members themselves have been almost as varied as the insects they studied and we have had Dr. E. O. Croft, obstetrician and University Professor, presiding when Ben Morley, the Secretary, sometime weaver and later museum curator, would address the chair: 'Mr. President, tha knaws Ah copped this off a wall as Ah was going to work . . .' Enthusiasm and a common interest in Lepidoptera linked these two. So also have been linked within the Section doctors, schoolmasters, museum curators, business men, and skilled artisans, all amateurs or with an amateur's approach, and in this at least the Section remains as it has always been.

BRYOLOGY AND BRYOLOGISTS IN YORKSHIRE

LORNA I. SCOTT

Our late secretary of the Yorkshire Naturalists' Union, C. A. Cheetham, said in his annual report for 1946 that that year had seen the completion of the task of bringing the botanical knowledge of the county up to date. The last of the revised accounts to be issued, *Yorkshire Mosses* (Cheetham), *Sphagna* (Thompson), *Liverworts* (Milsom) and *Lichens* (Watson), appeared in the Union's *Transactions* in 1945 and 1946. The number of species recorded (not including varieties) were Mosses 432, *Sphagna* 40, Liverworts 165 and Lichens 634; for each species vice-comital records were given and often ecological notes for new stations. These accounts incorporate an enormous amount of information gathered by many naturalists, the majority of whom were Yorkshiremen by birth or had spent much of their lives working in the county. They represent much shoe leather, long hours of study with lens, microscope and note-books, much co-operation and many companionable tramps over hill and dale. I once heard a bryologist, asked what attracted him to mosses, reply: 'Perhaps because they have no commercial value whatever'; and the Yorkshire naturalists who have carried out this labour of love have done so for the sheer fascination of studying these plants. In this account I am very conscious that in addition to those



bryologists mentioned there were scores of others whose finds were recorded merely with initials to indicate the author of the record. Judging from obituaries and from so many whom I have known, they were characteristically simple, self-effacing people, accurate observers and recorders and possessed with an infectious enthusiasm and willingness to help others.

In tracing the history of Yorkshire bryology one is impressed by the work, particularly in the early nineteenth century, of artisan botanists. Bryology involves microscopic work of an exacting type and yet a large proportion of the early records were contributed by working men. As the nineteenth century moved on and into the twentieth, the working man was always there but working progressively under better conditions and alongside men of varied professions, pharmaceutical chemists being perhaps the most frequent. One of the major problems to the early naturalists must have been the lack of available books and one can only assume that much of the naming was done by comparison with authentic specimens. As this account proceeds the parts played by some of the bryologists in building up Floras of their areas will emerge.

One of the earliest lists of Bryophyta for Yorkshire was that given by Robert Teesdale, sometime principal gardener at Castle Howard. In 1798 a Supplement was published to his *Plantae Eboracenses* and this listed 71 Mosses and 23 Liverworts for the whole county. Baines' *Flora of Yorkshire* (1840) was mainly a list of flowering plants, but in Baker and Nowell's Supplement published in 1854 John Nowell of Todmorden records 329 Mosses. Contributors to this list included R. Spruce, W. Mudd, W. Brunton, J. G. Baker, Dr. J. B. Wood, J. H. Davies, S. Gibson, Rev. J. Dalton, S. Hailstone and H. Ibbotson.

John Nowell (1802-1867) was an outstanding example of the working-man bryologist of this early period. He was a native of Todmorden and very naturally we find him associated with activities in Lancashire as well as Yorkshire; one of his close companions was another working-man botanist, Richard Buxton of Manchester.

Nowell lived in abject poverty. As a boy he worked on a hand loom in the local cotton mill, earning perhaps 8d. or 10d. a day, and later when the mule and power loom were introduced he worked as a 'twister-in' and continued in this humble capacity to within a few days of his death. He lived in a small cottage on a hillside some miles from his work and had a wife and children to support on the slenderest of means. Such living conditions were probably typical of the common lot of artisan naturalists of this period. He managed to have a magnifying glass and only much later a microscope and yet from these beginnings Nowell made himself an authority on the mosses of Yorkshire and Lancashire and nearby counties. He was an extremely careful worker and most precise in naming and recording. He became so acknowledged an expert that his fame reached Professor Schimper of Strasburg, co-author with Bruch and Gumbel of *Bryologia Europaea* (1836-55). That Schimper visited Nowell in Todmorden and went out to see his moss habitats with him seems a quite remarkable occurrence when one knows Nowell's background. Sir William Hooker, Director of Kew Gardens, also heard of this remarkable man and even offered him a position at Kew, a post which Nowell probably wisely refused, at any rate to the advantage of Yorkshire. Dr. Benjamin Carrington of Rawdon, who contributed the list of mosses and liverworts to Miall and Carrington's *Flora of the West Riding* (1862), says of him; 'There are few districts of Yorkshire and the adjacent counties with the rarities of which he has not become acquainted during his long and useful life and I paid my first visits to many of the stations here recorded under his guidance.' This simple man was commemorated by Mitten in the name of the beautiful hepatic *Nowellia curvifolia* and by Schimper in *Zygodon Nowellii*, a name which unfortunately has been rejected in subsequent nomenclatural changes. Nowell was evidently a much-loved companion and friend and it would seem true to say that fame reached him wholly unsought. Buxton speaks of him as being so far as he knew 'the first among working-men as a muscologist.' As regards achievement this was probably true but there were a number of others at this time and some mention is due to Samuel Gibson, already mentioned as a contributor to Nowell's list of mosses in the Supplement to Baines *Flora of Yorkshire*. Gibson was a 'whitesmith' or tinman of Hebden Bridge and is accredited with being the first adviser of Robert Spruce in the study of mosses. Gibson knew Spruce 'as a friend' by 1841 and Spruce records that he saw Gibson in his workshop with Hooker's *British Flora* by his side 'so begrimed and blackened as to be almost illegible.'

Richard Spruce (1817-93) was undoubtedly the most celebrated amongst early Yorkshire bryologists. He was born at Ganthorpe, near Castle Howard, and spent his life, apart from his periods of travel, in the nearby villages of Welburn and Coneysthorpe. Spruce was educated by his father who was a schoolmaster and evidently acquired from him his fine penmanship. In my own copy of *Notes of a Botanist on the Amazon and Andes* a former owner has attached a short note in Spruce's own writing and the clarity and neatness are certainly striking. Spruce followed his father in the teaching profession and became mathematical master at the Collegiate School at York in 1839. He had very delicate health and the closing down of the school in 1844 gave him an opportunity to reconsider his future as he felt that he could not stand the continued strain of school work. In 1845 and later in life he had severe illnesses and it is remarkable that so delicate a man stood up to the hardships of collecting travels to the Pyrenees and South America and ultimately left behind a record of achievement of which anyone would be proud.

Spruce started the study of mosses in 1836, and in 1841 found *Leskea pulvinata* Wahl., a moss new to Britain. He had many bryological friends in Yorkshire and when *The Phytologist* started in 1841 he contributed papers to it and through these became known to a wider circle including Dr. Thomas Taylor, co-author with Hooker of *Muscologia Britannica*, William Wilson of Warrington, author of *Bryologia Britannica* (issued in 1855 as the third edition of Hooker and Taylor's *Muscologia Britannica*), and William Borrer of Henfield, Sussex. Through correspondence with these and other friends Spruce built up a good herbarium. Borrer visited Spruce in Yorkshire and Spruce recalls, some thirty years later, an excursion with him to the Vale of York and the immense hassocks of *Leucobryum glaucum* on Strensall Moor 'fast being obliterated by the steam plough'. He goes on to mention that Strensall Moor, Stockton Forest and Langwith Moor are all relics of the Forest of Galtres and that parts are still rich in Sphagna, bog Hypna and numerous other mosses and Jungermannia. Spruce urged local botanists to lose no time in exploring the moors that still remained untouched by cultivation in the Vale of York. One does not

always realise that the threatening of the local flora with extinction started so long ago.

Alfred Russell Wallace described Spruce as 'one of the most lynx-eyed discoverers of rare species, as well as an accurate discriminator of them' and this is well borne out by his additions to the British and Yorkshire Floras. In Baines' *Yorkshire Flora* of 1840 only four mosses were recorded from Teesdale, but in a three-week visit in 1845 Spruce brought up the numbers to 167 mosses and 41 hepatics, of which six mosses and one *Jungermannia* were new to Britain. Also in 1845 in the London *Journal of Botany* he described 23 new British mosses of which about half were his own discoveries. In the same year in the *Phytologist* his *List of Musci and Hepaticae of Yorkshire* included 48 mosses new to the English Flora and 33 others new to Yorkshire.

After Spruce gave up teaching in 1844, through the help and advice of William Borrer, Sir William Hooker and George Bentham, a collecting excursion to the Pyrenees was arranged during 1845-46. The sale of sets of flowering plants was to defray expenses but incidentally Spruce added greatly to knowledge of the little known bryophyte flora. In 1849 he set off for his major travels to the Amazon and Andes, again under the auspices of the same friends, and this lasted until 1864. In addition to the large collections of flowering plants, Spruce again collected bryophytes, and especially hepatics. On his return he had an enormous number of plants to examine and describe and, despite almost constant bad health, he managed to work through all his South American Hepaticae.

It is a great tribute to Richard Spruce that Alfred Russell Wallace undertook the task of going through all the notes of his South American travels and editing them for publication in the two well-known volumes, *Notes of a Botanist on the Amazon and Andes*, a task made possible by the clarity of Spruce's writing even under difficult conditions. Wallace also wrote a biographical introduction covering Spruce's life and work in Yorkshire with the help given by Spruce's life-long friends, George Stabler and M. B. Slater. The first-named friend Spruce commemorated in the name of the hepatic *Marsupella Stableri*. Spruce himself was commemorated in the British flora by *Amblystegium Sprucei* B. & S., *Orthotrichum Sprucei* Mont. and *Marsupella Sprucei* (Limpr.) Bernet. Wallace describes Spruce as 'tall and dark with fine features of a somewhat southern type, courteous and dignified in manner, but with a fund of quiet humour which rendered him a most delightful companion.' It is sad to think that he was in great financial straits during his later years, despite a small grant from the British Government and one from India. He was buried at Terrington in the parish of his birth.

During the period 1864-93 Spruce gave help and advice to many bryologists in the county and elsewhere. One of his visitors was Dr. R. Braithwaite, a native of Whitby, who was writing his *British Moss Flora* which appeared between 1880 and 1905, being completed in his 81st year. Braithwaite was a good artist and systematist and the classification in this book was followed by M. B. Slater for the mosses in *North Yorkshire*. Braithwaite's *Moss Flora* with its beautiful illustrations was beyond the reach of the average moss student, but a smaller book, *Synopsis of British Mosses* by P. Hobkirk of Huddersfield had appeared in 1873, with a second edition in 1884.

The second half of the nineteenth century was an active period in bryology. John Gilbert Baker, a President of the Y.N.U., though primarily a student of flowering plants was also no mean bryologist. In the second edition of Baker's *North Yorkshire* Matthew B. Slater of Malton was responsible for revising the section on mosses, of which there were so many new records that the number of species rose from 309 to 418. Slater also added a section on Hepaticae, giving 124 species, as this group was very incompletely known at the time of the first edition. The Yorkshire Naturalists Union undertook the publication of the second edition and happily Baker lived to see this through the press.

Richard Barnes (1851-1918) was, like Baker, a Thirsk man. It was through the agency of J. G. Baker that Barnes went to work for a time at Chiswick and Kew, and it was at Kew that he was introduced to bryology and became so ready a disciple. Later he learned microscopic technique at Sheffield and became particularly interested in moss peristomes. His preparations are wonderful evidence of his delicacy of touch and skill; in mosses with a double peristome a single tooth of the outer peristome is neatly cut away to show the details of the inner. To meet this very unpretentious man in the field in his characteristic bowler hat one would never have

suspected that he was such an accomplished microscopist. He was for a time curator at the Saltburn Gardens and later set up his own nursery business at Harrogate. He made many moss records for Nidderdale, Cleveland and other North Yorkshire districts, and added to the Yorkshire flora *Bryum Marratii* Wils., *B. calophyllum* R.Br. and *Barbula glauca* Dixon.

The outstanding naturalist William West (1848-1914), though primarily an algologist, was one of the principal recorders of bryophytes in F. A. Lee's *Flora of West Yorkshire* (1888). West taught at Bradford Technical College and one of his pupils was C. A. Cheetham. One can be in little doubt that West had a great influence in widening and giving an ecological twist to the interests of this ready-made pupil-naturalist.

In 1902 the third of the Yorkshire floras appeared as J. Fraser Robinson's *Flora of the East Riding*. The list of mosses was contributed by J. J. Marshall of Beverley. A flora of a smaller area was Crump and Crossland's *Flora of Halifax* (1904). Charles Crossland compiled the list of mosses, but associated with him was J. Needham (1849-1913) of Hebden Bridge. Needham's main interest was in fungi, but he added the liverwort *Jubula Hutchinsiae* (Hook.) Dum. to the Yorkshire flora.

In 1896 the Moss Exchange Club (M.E.C.) was inaugurated and this was reconstructed in 1922 as the British Bryological Society (B.B.S.). One of the objectives of the M.E.C. was the exchange of specimens and the annual distribution was an important part of its work. This provided less experienced bryologists with authoritatively named specimens for comparative purposes. The other important task undertaken was the issue of Census Catalogues. Many experienced Yorkshire bryologists gave much help to the M.E.C. and B.B.S. and their association with the wider circle of bryologists had the reciprocal effect of furthering Yorkshire bryology.

William Ingham (1854-1923) was born in Manchester but spent his professional life associated with education in York. He was a quiet man with a fine head indicative of high ability; he was exceptionally keen-eyed and critical in his study of mosses and the problems of the harpidioid Hypna and the Sphagna appealed especially to him. Between 1895 and 1919 he published many notes in *The Naturalist* on Yorkshire bryology. The bryological reports at Y.N.U. meetings were usually given by him and between 1908 and 1919 he was responsible for the annual reports of the Section. He added about 20 mosses and hepatics to the Yorkshire flora and some to the British flora. He served as secretary to the M.E.C. from 1903-1922, was referee for Hypna and undertook the laborious tasks of editing the *Census Catalogue of British Mosses* (1909) and *British Hepaticae* (1913). His bryophyte herbarium is in the University of Leeds.

James Alfred Wheldon (1862-1924) and Albert Wilson (1862-1949) were closely associated with Yorkshire bryology. Wheldon was born in Northallerton, and was for a time in business as a pharmaceutical chemist in York. He contributed over 100 papers to various journals, one of the most important being *Key to the Harpidioid Hypna* published in *The Naturalist* for 1920 and 1921. His obituary in *The Naturalist* states: 'In Britain J. H. Wheldon during the latter years of his life, was undoubtedly our leading bryologist and was highly esteemed by both British and continental bryologists for his work . . .' He was a founder member of the M.E.C., treasurer for twenty years and a valued referee. He was a member of York and District Field Naturalists and the Y.N.U. Albert Wilson, co-author with Wheldon of the *Flora of West Lancashire* (1907), was a native of Lancashire, but as a pharmaceutical chemist he joined a firm in Bradford and later became a partner. After 1890 he lived at Ilkley and then at Sedburgh. He contributed many bryological records in Yorkshire and was also a keen student of the lichens. Another contemporary Yorkshire bryologist was George Brooke Savery (1874-1937), who contributed a paper on *Mosses of the Pool Area to The Naturalist* (1902). Later in life he became an invalid and moved to Devonshire, but continued with microscopic work on bryophytes.

The Sphagna have always presented a special problem in bryology as the single genus may be divided into so many forms. As a specialist on Sphagna we think immediately of Arnold Thompson (1876-1959). He was born at Rawdon, was a teacher by profession and spent most of his working life at Bootham School, York, and King Edward VII School at Sheffield. On retirement in 1936 he moved to Skipton. He was a familiar figure in the Sorby Natural History Society, the Craven Natural History Society and the Y.N.U.; a tall, fair, slight man, always ready to help beginners. He joined the B.B.S. in 1931, was secretary from 1936 to 1947, President 1948 and 1949 and for many years referee for the Sphagna. He helped W. R.

Sherrin in the preparation of the B.B.S. *Census Catalogue of British Spaghna* in 1937 and brought this up-to-date in 1947. He became an Honorary Member of the B.B.S. in 1952. Mr. Thompson was therefore an expert well equipped to compile *Yorkshire Spaghna* (1946) and a large proportion of the records therein are his own, though records by G. F. Horsley of Richmond, Yorks, W. Ingham, and W. Bellerby of York occur with great frequency. William Bellerby (1852-1936) was a timber merchant of York who started bryology in the Beginners' Section of the M.E.C. For more than thirty years he contributed to the B.B.S. Annual Distribution as well as contributing Yorkshire records, and with his sturdy figure, bright colour and white beard, he was always one of the happiest and most enthusiastic members of a field excursion. I have an attractive little water colour of a moss painted by him.

As lichens grow in similar habitats to the Bryophyta, it is very natural that some bryologists have studied these too. This applies to the very familiar Y.N.U. personality William E. L. Wattam (1872-1953). Though born at Oldham, Wattam spent nearly all his life at Huddersfield. When he retired in 1946 he had been for many years the managing clerk to a firm of solicitors. He joined the Huddersfield Naturalists' Society in 1898 and in turn held all the offices of the Society. It was typical of the sense of humble service of Mr. Wattam that for 49 years he carried out the laborious task of indexing *The Naturalist*. At Huddersfield Technical College he had studied under Dr. T. W. Woodhead and developed a strong ecological bent. From 1911 to 1920 he was Joint Secretary of the Union with Dr. Woodhead and on retirement the Union presented him with Smith's *British Lichens* and a microscope as a token of special appreciation. The compilation of *Lichens of Yorkshire* (1946) fell to Dr. Walter Watson (1872-1960). He was born at Sicklinghall, near Wetherby. Professionally he was a teacher and his name is especially associated with Taunton School, in which he built up a high reputation for Natural History. Watson was a fascinating and inspiring companion in the field with his wide and precise knowledge. On a first meeting he appeared rather solemn with a slightly depressed expression and a rather 'wilted' moustache, but once this front was penetrated one found the underlying strong sense of humour. I fancy there must have been times when the boys of Taunton School wondered if their science master was 'having them on'! He was an outstanding naturalist and well known in top scientific circles for his many papers on bryology and ecology. On a field excursion in Watson's company one could not help collecting lichens also and it was very natural that the Y.N.U. should call on this son of Yorkshire to compile the *Lichens of Yorkshire*. Previously only the *Flora of West Yorkshire* (1888) had given a fairly representative list of lichens. Since that date knowledge of the group had increased greatly and additional records were very numerous. The present list is a valuable and authoritative basis for future lichenologists in the county.

Yorkshire Mosses and *Yorkshire Hepaticae* bring us to three men who were so closely associated with Yorkshire bryology that it is difficult to think of the Section without them. William H. Burrell (1865-1945) was born in London and spent his professional life in Norfolk as a pharmaceutical chemist. His interest in bryology dated from a request, successfully fulfilled, from the Pharmaceutical Society for *Sphaerocarpus*, known to occur in certain turnip fields in Norfolk and he was already a bryologist of some repute when he retired in 1914 and settled in Horsforth. He soon associated himself with the Leeds Naturalists' Club and the Y.N.U. and papers by him appeared in *The Naturalist*. *The Mosses and Liverworts of an Industrial City* (*Nat.*, 119-124, 1917) showed his careful survey of the Leeds Naturalists' Club's area and was interesting as a study of smoke resistance. In 1924 a paper on Pennine Peat (*Nat.*, 145-150, 1924) embodied years of careful work. A problem that intrigued him for many years was the history and extending distribution of *Orthodontium gracile* var. *heterocarpum* Watson, now known as *O. lineare* Schwaegr. (*Nat.*, 295-302, 1940). This species is conspicuous and free-fruited and there seems little possibility that it had been overlooked. These papers show Burrell's appreciation of wider bryological problems, but he had also a meticulous knowledge of specific differences so that critical cases were referred to him and in helping beginners he invariably provided with the name useful hints for identification. Mr. Burrell was a small, neat man with great charm of manner; in owing him a great debt of gratitude for help in many bryological problems I am in company with many others as he was most liberal with his time and knowledge. Mr. Cheetham draws attention to the large part played by Burrell in making the compilation of *Yorkshire Mosses* possible.

He made a card index of Yorkshire records which was invaluable and gave unstinted help in nomenclature. He was for many years Curator of the William Ingham Herbarium in the University of Leeds; this contains some 12,000 specimens, amongst which are gatherings by many well-known bryologists and some county vouchers.

Francis E. Milsom (1886-1945) was also a Londoner by birth and a pharmaceutical chemist; he was a nephew of Mr. Burrell. In 1917 he joined the staff of British Dyestuffs Corporation Ltd. (later merged in I.C.I.) at Huddersfield. He joined the B.B.S. in 1923 and from 1934 onwards he was referee for British and European Hepatics. At the time of his death he was President-elect of the B.B.S. He joined the Y.N.U. in 1918 and his special knowledge of Hepatics gave impetus to the study of this less well-known group. He compiled *Yorkshire Liverworts* (1946) but unfortunately did not live to see it in print. The frequency of W.H.B. and F.E.M. as authors of records shows the great activity of uncle and nephew in Yorkshire bryology. Milsom had a fine tenor voice and was for many years a member of the Huddersfield Choral Society.

Christopher A. Cheetham (1875-1954) was born in Horsforth, and educated at Leeds Modern School and Bradford Technical College. He was a textile designer in a Leeds firm, but retired at 55 to devote his time to natural history. He joined the Y.N.U. in 1905 and was our very active secretary from 1934 until his death. Mosses and Diptera were his favourite groups, and his contact with W. West at Bradford had left him a deep-seated interest in ecology. His interest in mosses started in his school days, when, with a home-made microscope, he watched the movements of the peristome teeth of the 'silvery moss', and later his quick eye and appreciation of habitat made him an excellent field bryologist. He published many notes in *The Naturalist* from which I select his 1914 paper with Mr. Haxby of Bradford on *Mosses from Pre-Carboniferous Rocks near Austwick* and his 1939 paper on *The Moss Flora of Boulders*; these papers combined a knowledge of geology, for which he had good scope at Austwick, with an appreciation of moss habitats. He was much interested in the work on Pennine peat. His enthusiasm and happiness on field excursions was most infectious and I owe my own interest in mosses to his initiation at an Austwick meeting. He knew every inch of the Austwick and Ingleborough district and told how he once showed the tiny *Grimmia Doniana* to a late visitor by the light of a match and other specialities on Ingleborough by digging through the snow! Cheetham was a Yorkshireman born and bred and he concentrated on his home county. His knowledge of the ecology of species always added interest to collecting mosses with him and helped to fix them in one's mind. It was a happy chance that Mr. John Armitage had taken such a very typical photograph of him in the year of his death as the one which accompanies his obituary notice in *The Naturalist*, showing the keen look and lurking smile and the very characteristic field attire that we all knew so well. The night before his sudden death I called to see him in his cottage at Austwick, his microscope was on the table and specimens of Diptera ready to examine. He talked to me of mosses and a possible new *Thuidium* and it was good to think that he passed away as he would have wished with his faculties unclouded and his interest in mosses and flies still an absorbing delight. *Yorkshire Mosses* is a very fitting memorial to this Yorkshire bryologist.

Of present day bryologists Mr. H. Walsh of Luddendenfoot has been an assiduous observer, especially in the Halifax area. His 'Supplement to the mosses and hepatics of the Flora of Halifax' (*Nat.*, 1957, 113-136) is a painstaking work which brings out the changes in the bryophyte flora of that area over the fifty years which have intervened since Crump and Crossland's *Flora* was published. His observations on the phototropic response of elongating moss setae (*Nat.*, 1947, 137-139) show that his interest in bryophyte problems is not limited to their taxonomy and distribution. So far as I could find out such experiments had previously been carried out only on *Pellia*, where the process of seta elongation is very different. For his first experiments I am inclined to think that Mr. Walsh made a fortunate choice in his subject moss, *Splachnum*.

Mrs. Appleyard of Bradford had a flair for mosses and it was a loss to Yorkshire bryology when she moved to the south. Mr. G. A. Shaw and Mr. F. E. Branson are keeping the bryological flag flying in Yorkshire. It is hoped that more naturalists will be attracted to this fascinating group of plants to keep the picture of their distribution in the county up-to-date and to throw light on the many problems still awaiting solution.

UNFEATHERED VERTEBRATES

ELLEN HAZELWOOD

UNTIL recent years, the vertebrates were all included in a single section and the history of the Mammals, Reptiles and Fishes Committee is irretrievably bound up with that of the Vertebrate Section, comprising as it did members whose interests extended to all aspects of vertebrate zoology and whose horizons were not bounded by feathers. Of the section itself there is very little minuted history before 1920 although records and observations were freely exchanged so that William Eagle Clarke and W. Denison Roebuck were able, in 1881, to produce the *Handbook of Yorkshire Vertebrates*.

On Saturday, October 23rd, 1920, a meeting was held in the Leeds Institute in Cookridge Street, under the chairmanship of the late C. F. Procter of Hull. The convenor and representative on the executive was S. H. Smith of York and the other members present were W. J. Clarke (Scarborough), F. Lawton (Skelmanthorpe), Prof. W. Garstang (Leeds), Riley Fortune (Harrogate), E. W. Taylor (York), H. B. Booth (Ben Rhydding), H. H. Corbett (Doncaster), A. Haigh Lumby (Leeds), F. H. Edmondson (Keighley) and W. H. Parkin (Bradford). At this meeting, 'the secretary reported upon his efforts to trace any minute books and records of any work previously done by this Committee. He had written to most of the Vertebrate Section members of the Union without success', although J. W. Taylor of Leeds reported that some notes were among the papers of the late Denison Roebuck. On the proposition of C. F. Procter a minute book was to be kept and it was recommended to the secretary of the Union that a permanent home ought to be provided in York or Leeds 'where all minutes and records of the Y.N.U. could be housed.'

Unfortunately, at the following meeting on October 28th, 1921, in the Leeds Museum, it was reported that the Y.N.U. did not know of any minute books and records for which it was necessary to provide a permanent home! It was here reported also that 'a large parcel of notes collected by the late Denison Roebuck had been received by C. F. Procter who held them at the disposal of the Committee.' Jasper Atkinson was added to the Committee at this meeting during which 'many useful notes were contributed by C. F. Procter and H. B. Booth and by W. J. Clarke on fishes.' These fish notes, which were compiled from their contributor's persistent attention to the longshore fisheries at Scarborough continued throughout Mr. Clarke's active lifetime and his death in 1945 was a loss which has not yet been made good and which has occasioned a serious gap in our piscine records.

Further evidence of an active interest in Yorkshire fishes and fisheries came in October, 1925, when the convenor was instructed to congratulate the Yorkshire Fisheries Board on the imposition of by-laws restricting the size below which fish must not be taken, also to draw the Board's attention to the state of the salmon pass at Masham on the River Ure. At this time, the Committee had a hard core of enthusiastic sportsmen-naturalists with very active notions as to conservation. Meetings were lively and discussion ranged over wide fields of vertebrate natural history. The tea adjournment was long enough to allow a meal to be taken around a table with a sociability which was an asset to the 'friendly intercourse' which has always been a prime aim of the Union. When the war came, tea was served in the basement of the meeting-house, an innovation which appears to have come to stay.

Membership of the Committee has always been small but faithful and active so that names stand out through the years unobscured by dead wood.

Arthur Whittaker, who joined the Union in 1906 was a pioneer worker among the bat populations of S.W. Yorkshire, adding considerably to our faunistic knowledge of the Cheiroptera as well as experimenting significantly with the obstacle-avoidance mechanisms which we now know to be sonic devices. The ill-fated Oxley Grabham studied the bats of the York area around the same period, work which has been followed up by Dr. E. W. Taylor of York and Mr. Adam Gordon of Helmsley, both still happily with us. It is largely due to the last-named naturalist that we have adequate records of the Barbastelle in the county.

W. H. St. Quintin was another early member who worked hard for the aims and objects of the Committee. Squire of Scampston Hall, he was a devoted naturalist. He was Chairman of the N.E. Sea Fisheries Board for twenty years and his efforts produced by-laws against inshore trawling and secured a patrol vessel to see that they were effectively carried out. He then directed his attention to the close times

for crabs and lobsters, obtaining the services of Prof. McIntosh to make a survey, after which the close season was abolished with a corresponding increase in catches. He died in June, 1933, at the age of 81.

Prof. Walter Garstang occupied the chair of Zoology at Leeds University from 1907-33 and had an international reputation as a zoologist. He seldom missed a meeting and was President of the Union in 1918. His publications on the plaice are classics and in a wider field he published works on the tunicates, marine fisheries and the theory of recapitulation. He left the county upon his retirement.

Another founder member of the section who remains for many of us a well-cherished memory is H. B. Booth of Ben Rhydding. He was our first secretary, later became chairman of the Section and was elected President of the Union in 1921. Although outstanding as an ornithologist, his interests extended to all the vertebrates and his contributions to discussions on various aspects of zoology were always fruitful, stemming as they did from a lifetime's interest and keen observation. Many of us will recall how he used to produce his well-compiled report and then, having folded away his sheaf of papers, would fumble another wad from an inner pocket and continue his 'further notes not yet classified'.

A valued member since the first meeting on December 7th, 1907, was S. H. Smith of York. He served as convener and as chairman of the Committee, holding the latter office from 1926 to 1938. He was a great fisherman and did extensive work on the life-cycles of some coarse fishes and on the status of the *Salmonidae*. Meetings under his ruling were occasionally noteworthy for the chaff and banter which punctuated the more serious proceedings and his response to the bore was an unashamed snore. He was greatly missed when he died in 1942 at the age of 60, early for a naturalist.

Another pair of the same school of sportsmen-naturalists were C. F. Procter of Hull and F. H. Edmondson of Keighley whose friendship extended beyond the meetings of the Committee. They had a common love of open-air pursuits though Procter was a man who made the Humber his own while Edmondson was a denizen of the moorland. In his later years, F.H.E. was always accompanied to meetings by his faithful hound, a black retriever which sat patiently, nose in his hand or pocket, tail thumping floor from time to time as the audience stirred. From time to time both would be missing as Edmondson made his trips to Africa, and especially to the Congo where he was on friendly terms with the pygmies, and from time to time we were regaled with photographs of big game. He retired to Essex and was a steady correspondent until his death in 1956.

Times change and habits with them and the sportsman-naturalist is now hardly to be numbered in our membership. There will be those to whom this is no matter for regret but they were a band of true enthusiasts, in constant touch with game-keepers, water-bailiffs and other outdoor workers so that little of moment passed them by. All who were members of the Y.N.U. were true conservationists and gave freely from their pockets and of their time in this cause.

It would be wrong to conclude without mention of those who have done the bulk of the work of the Committee, of those like W. E. L. Wattam of Huddersfield, who for many years provided phenological information with unfailing regularity. Of W. G. Bramley who succeeded S. H. Smith as secretary and convener in 1926 and continued in this office until the writer took over in 1936; of Rex Procter who was for many years secretary to the Vertebrate Section, who contributed notes on amphibians and fishes to *The Naturalist* for many years and whose untimely death we mourned earlier this year. And by no means least of W. Bennett who for so many years has been the man to be relied upon to provide and man the lantern or projector, to see about the teas and cheerfully to cope with all the little problems which can beset a meeting.

Memories are largely of people, of 'friendly intercourse', of Dr. Taylor's masterly summation of Yorkshire mammal records in his Presidential Address for 1955. They are also of annual exhortations concerning work to be done—most of which remains to be done—and of hopes, which remain undiminished, that the section will one day recruit sufficient devotees that it may tackle for the first time its real function of exploring the distribution of vertebrates, other than birds, all over the county. We are still unsure of the distribution of the Common Toad so that we can approach the next century with a purpose which I hope will be matched by enthusiasm.

FUNGUS FORAYS IN YORKSHIRE AND THE HISTORY OF THE MYCOLOGICAL COMMITTEE.

E. M. BLACKWELL

In the early days following the formation of the West Riding Consolidated Naturalists' Society in 1861, fungi were undoubtedly collected along with every other living thing, but rarely reported for want of a name to call them by. There were big gatherings of the societies of Huddersfield, Halifax, Wakefield, Heckmondwike, Leeds and Norland; at the quarterly meeting in Huddersfield on May 7th, 1864, there were about a hundred present and it is stated that 'the principal objects of the meeting were the exhibition and exchange of natural history specimens of all kinds.' Nevertheless in the records of 'rambles' in the old *Naturalist* of 1864-7 there is no mention of fungi.

In the first volume of the new *Naturalist* (1875) lists of fungi are supplied by the individual societies: first by Wakefield, then by Goole, then by Bradford. Then it is recorded that at the 'fifteenth Annual Meeting (1876) at Battyford near Mirfield,



sixteen species of fungi among other things were collected.' 'Now,' says Charles Crossland in his presidential address of 1907, 'the era of renewed activity among Yorkshire fungi opens.'

When the West Riding Consolidated Naturalists' Society—already often referred to as the 'union of Yorkshire naturalists'—became officially the Y.N.U. in 1877, it so happened that both the elected President and General Secretary were anxious to promote the study of fungi. The Rev. William Fowler in his inaugural presidential address urged that more attention be paid to the 'neglected orders,' and it was William Denison Roebuck who edited the eleven pages of bibliography of fungi in *The Naturalist* 1888-93. Moreover on December 2nd, 1876, the Botanical Section of the Y.N.U. had appointed Mr. C. P. Hobkirk of Huddersfield and Dr. H. Franklin Parsons of Goole as 'the nucleus of the Committee': a significant 'nucleus' for mycology. Mr. Hobkirk had recorded fungi in his book on Huddersfield (1868) and Dr. Parsons was already collecting and stressing the importance of collecting perfect specimens and making accurate memoranda. In his report as the secretary of the Botanical Section there is a list of fifty species of fungi collected in 1878 (*Bot. Trans. Y.N.U. Vol. 1, 25-27*). In *The Naturalist* (1876-9, 158) we read of other 'members who interested themselves in this branch . . . Mr. George Brook of Huddersfield; . . . Messrs. Thos. Hick, Leeds; W. West, Bradford; and W. N. Cheesman, Selby.' To which names we might add George Masee of Scarborough and H. T. Soppitt of Bradford, who 'looked forward to the first Y.N.U. Fungus Foray, 1881, when three of the few British experts were to be present.' Meanwhile no one had worked harder than Dr. Parsons to bring the fungi into the records. But it was heavy going: in great part because there was no handy field book of reference, no key for the identification of species. He could only write in *The Naturalist* of 'fungi collected and taken home for investigation with the microscope.' However, by 1879 he had submitted the names of 179 species from a district (Goole) not particularly rich in these.

Gradually a group formed, the members of which tended to work together on the Y.N.U. excursions and to get off the beaten track. As Charles Crossland was to write after one such occasion: 'We missed the main body but would have been left behind very soon anyhow.' The Y.N.U. had to recognise this strong young body growing up and in 1881 their meeting was billed as a fungus foray.

THE FIRST THREE FORAYS.

The term 'fungus foray' must have come from the Woolhope Club and become a familiar expression to Alfred Clarke and George Masee through their correspondence with Mordecai C. Cooke and Worthington G. Smith.

Masee, introduced to the Y.N.U. by W. West, was acting as cryptogamic secretary in the years 1881-2, and at the first Yorkshire foray at Leeds in 1881 he was one of the principal leaders. Three knowledgeable visitors attended the meeting: W. Phillips of Shrewsbury, Rev. J. E. Vize of Forden Vicarage, Montgomeryshire, and Dr. C. B. Plowright of King's Lynn: men who had experience of fungus exhibitions in Paris and Copenhagen and were in touch with Dr. Robert Fries of Sweden. The foray was arranged by W. Denison Roebuck. About fifty species were added to the county flora.

In 1884 there was another organised (but not Y.N.U.) fungus foray. 'After a substantial breakfast at Mr. Cheesman's house, the party set off in a couple of conveyances provided by him... one conveyance narrowly escaped being precipitated into the river through the inordinate curiosity of their horse...' 'Too dry' said everyone. But Mr. Fowler found *Agaricus sinuatus* and the edible *A. nebularius*, Mr. Roebuck... *Cortinarius cinnabarinus*, Mr. Soppitt turned up *Torrubia ophioglossoides* parasitic on *Elaphomyces granulatus*, 'and presently the whole party, on bended knees, were digging up the treasures.' Mr. Cheesman conducted them to *Lactarius deliciosus*. This and several other species were 'collected for cooking'... 'At Skipwith man and beast partook of refreshment.' At Mr. Cheesman's 'a substantial repast, to which ample justice was done, awaited the hungry (and cold) mycologists.' After this they dispersed by train. A good list of fungi follows the account in *The Naturalist* (1884, p. 72 and later pages).

The third of these early forays was in 1888, and again centred on Leeds, Bramham and Harewood parks and woods being visited. Mr. Masee was already working in the Herbarium of the Royal Botanic Gardens, Kew, but came to Leeds for this meeting to join the Yorkshire mycologists. This was Charles Crossland's first foray to which he was invited by Alfred Clarke. He has described how the specimens collected were displayed in the evening side by side on the show cases at the Leeds Philosophical Society museum. 'After that, fungi opened out to me a new world.' (*Nat.* 1908, 151).

THE LAST DECADE OF THE NINETEENTH CENTURY WITH THE FORMATION OF THE BRITISH MYCOLOGICAL SOCIETY

The circular of the meeting of the Y.N.U. at Doncaster on Thursday, 17th September, 1891, states that it will be preceded by a fungus foray on the Wednesday, ... the woods of Edlington and Wadworth will be explored for fungi under the superintendence of Mr. George Masee, F.R.M.S., and Mr. H. T. Soppitt.' Looking back on this meeting, Charles Crossland said in 1907, that Masee 'was the means of establishing an annual Yorkshire foray, which is still held in different parts of the county, and to which he remains loyal.' (*Nat.* 1908, 148). It seems to be generally agreed that the year 1891 saw the beginning of the regular forays. Indeed it saw the beginning of the Mycological Committee with Rev. W. Fowler as chairman. In 1892, Charles Crossland was acting as secretary of this committee, and was responsible for the fungus foray at Malton which followed the hundredth meeting of the Y.N.U. at Coxwold. The following notice was printed on the circular: 'Mycologists are cordially invited to visit Yorkshire and join in the investigations. Mr. Geo. Masee, F.R.M.S. and Dr. M. C. Cooke have already intimated their intentions of being present, and Messrs. H. T. Soppitt of Bradford; Charles Crossland of Halifax; A. Clarke of Huddersfield; Rev. Wm. Fowler, M.A. of Liversedge; Messrs J. W. Sutcliffe of Halifax; W. N. Cheesman of Selby; Joseph Sutcliffe of Huddersfield; M. B. Slater, F.L.S. of Malton, will also be present and take part in the investigations.' Then came an announcement of a fungus show to be arranged at the museum.

The year 1893 saw the highly successful meeting at Pocklington, another meeting

of the Y.N.U. 'preceded by a Fungus Foray.' A similar notice this year and the next includes the name of Mr. Carlton Rea, M.A. B.C.L., of Worcester, and again a fungus show. In *The Naturalist* of March 1894, Charles Crossland has a report of this meeting in which he says; 'The fungus forays held under the auspices of the Y.N.U. doubtless owed their origin to the combined influence of three causes—(1) a laudable ambition . . . not to be behind other societies in . . . a fashionable feature of the day; (2) a desire to supplement the somewhat scanty knowledge of the mycology of the county; (3) to meet the desire of a few mycological members of the Union for mutual intercourse' . . . and again 'The justly celebrated Hereford foray which for many years monopolised the first week in October, and was the universally acknowledged meeting-place for exchange of opinion and courteous criticism between British and foreign mycologists, has unfortunately run its course, and it is the hope and ambition of the members of the Yorkshire Union that the annual Yorkshire gathering may, by avoiding the weak points of its predecessor, which were mainly confined to an excess of hospitality, prove at least equally attractive and instructive to mycologists.' Then follows a long list of fungi found on the Pocklington foray. We must remember that volumes I and II of Masee's *Fungus Flora* were published in 1892-3. We have only to read the eulogistic and grateful reviews by Soppitt in *The Naturalist* to realise the impetus this gave to collecting.

In 1895 the circular is in three parts. The first and third give notice of general Y.N.U. meetings *viz*: the 118th and 120th. The middle one announces a fungus foray. From this time, forays have separate notices and are not billed as a day 'following' or 'preceding' a general Y.N.U. meeting. Moreover, this 119th was a weekend meeting to be 'held at Huddersfield, September 7th to 10th.' This is the full notice: 'The Y.N.U. Mycological Committee, of which Mr. Charles Crossland, 4 Colebridge Street, Halifax, is the Hon. Secretary, will take charge of the whole of the arrangements for this meeting. Mycologists from any part of Britain are cordially invited. The following have signified their intention to be present: Dr. M. C. Cooke, M.A., A.L.S.; Mr. George Masee, F.R.M.S., F.L.S.; Mr. Carlton Rea, M.A., B.C.L.; Rev. W. Fowler, M.A., and other members of the Mycological Committee.' The group photograph taken by Alfred Clarke at this meeting was reproduced in *The Naturalist* earlier this year (1961, p. 59).

It was planned to be an important meeting, and so it turned out to be, for it made arrangements for the annual foray of 1896 to be held at Selby, where it was decided 'over a cup of tea in the house of Mr. Cheesman (who, as in 1884, had been responsible for local arrangements, and in no small measure for their success) that the formation of a national society should be proposed.' This important meeting of September 19-22, was reported by Charles Crossland in *The Naturalist* (1896, 355-357) followed by a list of species collected. 'The gathering of mycologists and cryptogamists in general was larger than on any previous occasion, and it was gratifying to notice the welcome presence of several Woolhopeans, who acknowledged that the Yorkshire gathering is a worthy successor to the once famous annual meeting of mycologists at Hereford under the auspices of the Woolhope Club. There were present Mr. G. Masee, F.R.M.S., F.L.S., of the Royal Herbarium, Kew; Mr. Carlton Rea, M.A., B.C.L., Worcester; Dr. Plowright, F.L.S., F.R.C.S., King's Lynn; Mr. T. Hey, M.C.S., Derby, and nearly all the Yorkshire workers in mycology . . . The business meeting was held on Monday evening in the Londesborough Arms, the President the Rev. W. Fowler, M.A., of Liversedge occupying the chair.'

There was, as usual, a fungus show, and a number of short addresses were given, one being by Mr. Harold Wager, F.L.S., of Leeds, who was elected a member of the committee. 'Mr. Clarke of Huddersfield exhibited a large number of charming and novel stereoscopic views of fungi.' At the business meeting the idea of a national society was revived. This had previously been discussed by mycologists at various times and places. Now at last it was decided and the British Mycological Society was born with the objects of holding an annual autumn foray, of one week's duration, in a new locality each year, and the publication of an annual report and résumé of work—British and continental—dealing with mycology.' Then and there a score of members were enrolled and the necessary officers elected, George Masee, Carlton Rea and Charles Crossland being chosen as President, secretary and treasurer respectively. Following this meeting there was 'A Lincolnshire Day,' September 23rd at Grimsby, the Lincolnshire Naturalists' Union having been formed in 1893 with the Rev. Wm. Fowler as President.

From now on there were to be two autumn forays. At first they were all attended

by much the same group of people, but gradually the Yorkshiremen withdrew to their own county, concentrating on building up the *Fungus Flora of Yorkshire* which Massee and Crossland completed in 1905. There was always, however, a considerate arrangement of dates so that any mycologist who wished could attend both meetings. The British Mycological Society covers the whole of the British Isles. Members of both societies keep them linked. There have been several joint meetings; in 1946 the B.M.S. invited the Y.N.U. to join them on their jubilee foray for which they had chosen Mulgrave Woods. The last joint meeting was at Sheffield in 1956, but in addition we held our own autumn foray at Richmond and were honoured by the presence of Carlton Rea's daughter, Violet, and her husband Dr. Astley Cooper. She spoke to us of her father and of early forays she had attended as a child and exhibited some of her mother's beautiful paintings of fungi. In 1943, Mr. and Mrs. E. W. Mason (then foray secretary to the B.M.S.) and Mr. A. A. Pearson joined our 60th Y.N.U. foray and came again in 1944. Out of this it would seem the spring foray was born, the first one being held from April 6-8th, 1945, with the University of Leeds as a centre. Spring field meetings during which Ascomycetes and Fungi Imperfecti have held the centre of the stage have since been a regular feature of the mycological programme.

MYCOPHAGY

The interest in fungi as food was stronger in Yorkshire in the 19th century than it has been since, in spite of a serious effort made by John Ramsbottom during the 1939-1945 war, to educate the British people in the recognition and use of edible toadstools to vary the dull and limited war-time diet. Yet fungus dinners were a great feature of the early forays, and were announced on the circulars: e.g. on the circular announcing the fungus foray at Leeds in 1881 we read: 'At the Dinner a selection of the edible fungi will be cooked.' Dr. Grainger writes. 'The Colne and Holme Valleys of the West Riding probably had more local Naturalist Societies per square mile than any other place in the world. Societies at Huddersfield, Milnsbridge, Marsden, Berry Brow, Honley and Holmfirth were still extant when I knew them between 1930 and 1939. They met in public houses, following the social custom of days before Board-provided schools, the independence of Mechanics' Institutes or the dependence of Youth Clubs. It was perhaps natural that in such practical communities a fungus supper of edible kinds should be one of the first expressions of mycological study. Berry Brow Naturalists staged the most successful and persistent fungus suppers; all members collected, but the selection for the stew was supervised by Mr. Crawshaw and no-one was even indisposed over the years. The varieties passed were the well-known ones, though perhaps blewits and blushers predominated. All were boiled together with stewing beef. Someone was sure to find sand or a maggot, though really such foreign bodies existed as banter. There was always a lengthy argument as to whether the noble fungus should be debased by mere meat or should be enjoyed alone, but the epicures never had their way.'

In his presidential address to the Y.N.U. in 1907, Charles Crossland recalled that Alfred Clarke like many others began by hunting for edible fungi and developed later a scientific interest. 'In season, quantities were taken to the meetings: often the edible species were cooked and the respective merits of the various kinds discussed. When it became known that a delectable species had been seen in abundance in any particular district, bags and baskets [were taken], and on more than one occasion a horse and trap was hired, to bring back the spoils'.

In the first volume of the new *Transactions of the British Mycological Society* in an account of the autumn foray in Sherwood Forest (their first foray, which was well attended by Yorkshiremen) we find this 'Mr. E. Salmon exhibited a fine example of *Sparassis crispa* Fr. from Surrey, which was subsequently photographed by our member Mr. A. Clarke, and rumours say finally demolished by some ardent mycophagists at breakfast at the Lion Hotel.'

There are still a few mycophagists on the committee and still, though very rarely, we cook and enjoy our finds.

OFFICERS, LECTURES AND EXHIBITIONS.

The Committee has been well served by faithful and efficient secretaries, five in all, three with long-standing service.

Charles Crossland seems to have slipped into the position from the moment he was introduced to the growing company of mycologists, by his friend Alfred Clarke,

in 1888. He soon established a high standard of recording and reporting. His contributions to *The Naturalist* for a quarter of a century, are invaluable.

Similarly, the Rev. Wm. Fowler found himself leading and presiding over the young committee from its earliest, unformed days, until George Masee was formally elected chairman in 1899. He and Charles Crossland worked closely together until the end of 1914 when Crossland retired as secretary and Masee as chairman. At the foray at Sandsend on October 3rd, 1914, there had been a presentation to the retiring secretary. It had been a good gathering and Crossland wrote a pleasant, thorough account of it (*Naturalist* 1914, 380-386, with a good group photograph). To this there is an addendum written by the newly elected secretary, A. E. Peck, describing 'a pleasant little ceremony' when Mr. Crossland was presented with 'a suitably inscribed piece of silver plate' . . .

A. E. Peck took over at a peak period. There had appeared in 1913 in the *Yorkshire Post* a long and enthusiastic report of the 25th autumn foray, and the reports in *The Naturalist* of 1912 and 1913 give a good picture of the flourishing state of affairs just before the first world war.

In the same year Dr. Wager took up the chairmanship with zest and served well for fifteen years. In a paper he had read before the 'Conference of Delegates' at the meeting of the British Association in Portsmouth, 1911, entitled: 'The Study of Fungi by Local Natural History Societies,' he had referred to the strikingly successful work of the mycological committee of the Y.N.U. . . . 'The Committee has been at work for more than twenty years on a systematic investigation. In 1905 a list of about 2,626 spp. based upon no less than 16,700 records, was compiled.' . . . His first few years as chairman were years of war and the meetings were small. The next ten years brought big changes. Several of the older members died: Thos. Hey and Thos. Gibbs in 1919; C. H. Broadhead in 1920; Sir Henry Hawley in 1923; Alfred Clarke and W. N. Cheesman in 1925. The Committee was invaded by young people among them Miss Daisy Hilary, Miss Mary Hewlett (later Mrs. John Grainger), Willis G. Bramley and John Grainger. They were encouraged by F. A. Mason. These newcomers were much helped by the publication together, as a key, of three papers by Dr. Wager on the classification of agarics that had appeared in *The Naturalist* (1920, 289-294, 329-332, 357-359). A later generation was similarly helped by the publication, as separates, of five keys prepared by Mr. A. A. Pearson (*Nat.* 1946, 1948, 1950, 1954, 1955), who had joined the Y.N.U. meeting at Stamford Bridge and was thereupon elected to the Mycological Committee. This too gave a post-war fillip to collecting.

In November, 1929, Dr. Wager died, deeply mourned by the Committee which he had served ably and vigorously, as chairman since 1915, and many years before that as an active member. There was no chairman's address at the annual meeting at Whitby in 1930 and before the election of a new chairman, F. A. Mason proposed that in future the chairman should be elected for one year only. This was agreed and A. E. Peck was elected for 1931. This left the secretaryship vacant and John Grainger was elected to fill the vacancy, and with some regret A. E. Peck passed over the precious minute book he had so amply filled. In his capacity as secretary John Grainger helped F. A. Mason with the recording, but in 1936 F. A. Mason died and the committee elected John Grainger and W. G. Bramley joint recorders. By this time the publication of the new catalogue was assured by the munificent offer by Mr. Fowler-Jones to defray the costs, and a good part of the work had been done. However John Grainger deemed it wise to devote his available time to the catalogue and so he retired from the secretaryship in 1937. George Sheard served for one year and then in 1938 our present secretary Miss Jennie Grainger began her efficient, selfless service to the Committee. On the completion of her twenty-first year as secretary she was presented with a carved oak kist and a book of nearly 100 signatures of Y.N.U. mycologists who had shared in making this token of appreciation.

The first formally elected recorder was Alfred Clarke in 1918. He had to come to the rescue when the retiring secretary was no longer able to carry on as recorder. The minute of September 29th, 1915 reads: 'Mr. Alfred Clarke volunteered to write up on the loose leaf system all records made subsequent to the publication of the *Yorkshire Fungus Flora*,' which offer the meeting accepted. Never were records more meticulously kept. In 1921, F. A. Mason undertook to collaborate with Alfred Clarke, to incorporate C. Crossland's 'Supplementary Lists' and speed up publication. Dr. Grainger writes: 'Continuity of the records was disturbed by world war I, although it was found later that Alfred Clarke had continued to note localities for

species. These were, however, not available to F. A. Mason when he took over, so he started to keep records in the form in which they were ultimately published. His untimely death prevented his completion of the work and the MS. was handed to me. Fortunately I was able to complete the records from material which Alfred Clarke had left at the Tolson Memorial Museum. Mr. R. Fowler Jones was the connecting thread in all this. He had arranged with F. A. Mason to bear the whole cost of the publication and distribution and this he ultimately did.'

The Committee is about 70 years old and until 30 years ago had had only three chairmen. Canon Fowler, Mr. Massee and Dr. Wager gave a chairman's address at each annual meeting during their term of office, and frequently a second talk or lecture. Indeed there might be half a dozen more papers read in those early days, and on a wide range of subjects. Alfred Clarke exhibited his famous stereoscopic views of fungi, others their paintings and photographs. Quite often these exhibitions were thrown open to the villagers, to school-children and to visitors. From the earliest days there had been a 'show.' At the end of the report of the fungus foray of 1881 (*Botanical Transactions, Y.N.U.* vol. I, 207-209) we find: 'On Saturday a 'show' was held, for which numerous consignments of fungi had been sent in from all parts of Yorkshire, and in the evening a fungus dinner, at which several species were cooked with great success.' On the circular of 1888, is this announcement: 'The Show will be open for inspection until 10 o'clock, and will remain open all the following day . . . (Admission 1d.) . . .

The idea was to educate rather than entertain. The circular announcing a fungus foray in Maltby Wood in 1905 leaves no doubt of that . . . it is the intention of the Mycological Committee to make this five days foray as educationable as possible. The specimens collected, suitable for exhibition, will be classified, named, and arranged on tables in systematic order. A commodious, well-lighted room, with adjoining work-room, has been secured from Monday morning to Thursday morning.' As well as the 'show' there were public lectures, which at one time assumed an important position, and became a regular advertised event, so that the Y.N.U. won fame as a source of scientific information to an awakening public. The last of these public lectures was delivered by Dr. Grainger in 1950, mainly to farmers. It attracted an audience of about a hundred people; members of the Malton and district Farmers Union having been notified well beforehand. W. G. Bramley gave one or two, and another that stands out in memory was given at Sandsend by Mr. A. A. Pearson in 1946. Of quite another sort were the specialist lectures to the Committee like the three given by Mr. Petch (1934-36) on the Hypocreales, and those by Mr. Massee, Dr. Wager and Mr. Pearson on the taxonomy of the agarics.

The character of the meetings has changed in the last ten or fifteen years. There is rarely time for a lecture other than the chairman's address now. With more microscopes and more lamps, and with more books of reference, we can get further with identifications before submitting our problems to the referees. More time, therefore, is spent in the work-room.

These forays would be dull indeed and would by no means be a full record if the hunters had been limited to roadside verges, lanes and open spaces. It was in old woodlands of undisturbed timber and among the dense vegetation by lakes and streams that the treasures were found. For the privilege of exploring these unspoilt places, the Committee has been indebted these many years to the land-owners whose permission to roam at will over their land has been generously and repeatedly given.

In this centenary year we mourn the loss of Dr. Douglas Hincks, one of the greatest personalities on the Committee and indeed in the Y.N.U. Too soon, at the age of 54, has he become a 'past' Yorkshire mycologist. As soon as he arrived at a meeting or a foray we felt safe, organised, and that all would be well. No doubt the Union has had such live leaders before, no doubt it will have them again, but in this year we feel bereft and desolate. Time will see us proud of and grateful for his work.

FIELD MEETINGS

C. M. ROB.

The first organised field meeting of the Union was in 1877, the year the name was changed from West Riding Consolidated Naturalists' Society to The Yorkshire Naturalists' Union. The societies forming the W.R.C.N. were all within walking distance of each other, though in some cases it was a long walk. Transport was limited, and members collected specimens as they made their way along the country lanes around Wakefield, Heckmondwike, Holmfirth, Huddersfield and Halifax, showing and discussing their finds at the meeting.

The W.R.C.N. was only four years old when the need for some more organised field work became apparent. In 1865, Mr. Robert Smith 'Strongly recommended excursions to the Society, being quite sure of many benefits arising therefrom,' and in 1866 three meetings were held, at Howley ruins near Batley, Wentbridge and Clayton West. The first was 'fairly well attended,' attendance dropped for the second, and the third was a complete failure, and we hear little of any subsequent field meetings until after the reorganisation in 1877.

The meeting at Pontefract was the first of a series that has continued with only one break—in 1918—to the present day. At this first meeting so much time was spent seeing the castle and the remains of All Saints Church that there was no time for field work; as a result of this it was agreed that henceforth there should be no sight-seeing or lecturing in the field, a rule that has ever since been observed.

In 1877 the sending out of circulars defining the area to be worked began. The meetings had no official beginning; members were expected to get to the area, and work until they met for tea, which was followed by sectional meetings, and the day ended with a full meeting of all present. Attendance at these early meetings was very good, 125 at Pontefract in 1877, and 120 at Thirsk in 1882; at the Harrogate meeting in 1879, 15 of the 25 affiliated societies were represented. In 1961, 15 out of 42 would be considered a good turn up.

The Naturalist for 1930, pp. 416-7 contains a map showing the places visited by the Union up to the end of 1929. About 140 localities had then been visited and a goodly part of the county investigated. A revised map bringing this information up-to-date would be too congested with symbols to be of equal value. Instead a list of places used as headquarters for field meetings is given below, arranged in vice-counties. This list will, it is hoped, serve both to bring the facts about the Union's excursions up-to-date and at the same time be of value to Yorkshire naturalists as a guide to local natural history, for the reports on all the excursions may be referred to in the appropriate volumes of *The Naturalist*. Sedbergh in the extreme north-west has served as headquarters on no less than eight occasions, Doncaster, Askern, Filey and Market Weighton have been selected for the meeting place seven times, while Pocklington, Spurn, Driffeld, South Cave and Robin's Hood Bay, have six to their credit. The last field meeting of 1961 at Sedbergh was the 599th of the Y.N.U.

In addition to the general meetings listed, the constituent sections, and in particular the Mycological Section, have a long list of field meetings where very valuable work has been, and is still being done. The field excursions are a common meeting ground for naturalists of all sections; the expert and the novice rub shoulders and members of affiliated societies can meet and work together. The reports of the meetings published in *The Naturalist* are a valuable record of the contemporary state of the natural history of the areas visited and when a number of visits have been paid to the same district the reports are of comparative interest, showing what changes have taken place over the years.

At one time it was customary to have weekend meetings at Easter and August Bank Holiday, but the former proved to be too early for useful field work in most sections and the latter too awkward to organise and insufficiently supported on account of holiday arrangements. Meetings are now held at Whitsuntide and at intervals to the end of July, two weekend and three day meetings being the present rule, one in each vice-county.

Although more than 200 places have been visited by the Union, Yorkshire is such a big county that there is still ample ground left for exploration and even if the present series continues unbroken for another hundred years there will still be new things to find and, let us hope, a Yorkshire Naturalists' Union still here to find them.

Alphabetical List of Field Meetings, 1877-1961

VICE-COUNTY 61—South-East Yorkshire.

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|---|---|
| Allerthorpe, 1927, 1945. | Leven, 1952. |
| Beverley, 1882, 1920. | Lowthorpe (Driffield), 1890. |
| Birdsall, 1959. | Market Weighton, 1880, 1888, 1897,
1909, 1917, 1930, 1943. |
| Bishop Wilton, 1956. | North Cave, 1953. |
| Brantinghamdale, 1949. | North Cliff, 1954. |
| Bridlington, 1886, 1912, 1923. | North Grimston, 1902. |
| Brough, 1901. | Pocklington, 1885, 1893, 1905, 1936,
1945, 1961. |
| Bubwith, 1937. | Selby, 1879, 1924. |
| Driffield, 1899, 1916, 1929, 1939, 1960. | Skipwith, 1896, 1912, 1893, 1933, 1940. |
| Filey, 1883, 1895, 1903, 1914, 1922, 1931,
1948. | Sledmere and Wetwang, 1891. |
| Flamborough, 1886, 1895, 1906, 1925,
1948. | South Cave, 1894, 1907, 1921, 1932,
1942, 1947. |
| Hedon, 1937. | Spurn (incl. Easington), 1884, 1898, 1910,
1919, 1928, 1946. |
| Holme-on-Spalding-Moor, 1924. | Stamford Bridge, 1913. |
| Hornsea, 1881, 1900, 1908, 1926, 1935. | Thixendale, 1956. |
| Howden, 1951. | Welton, 1878, 1887. |
| Keyingham, 1955. | Withernsea, 1892, 1904. |
| Kirkham Abbey, 1889, 1920, 1958. | |

VICE-COUNTY 62—North-East Yorkshire.

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|------------------------------------|--|
| Brafferton, 1908. | Malton, 1880, 1916, 1950. |
| Baysdale, 1960. | Middlesbrough, 1890. |
| Castle Howard, 1926. | Osmotherley, 1908, 1931. |
| Castleton, 1911, 1939. | Pickering, 1886, 1929, 1938, 1941, 1956. |
| Coxwold, 1892, 1902, 1919. | Robin Hood's Bay, 1888, 1889, 1907,
1924, 1933, 1946. |
| Egton Bridge, 1925, 1930. | Redcar, 1921. |
| Farndale, 1934. | Runswick Bay, 1909. |
| Goathland, 1903, 1906, 1954, 1957. | Saltburn, 1887, 1915, 1932. |
| Great Ayton, 1913. | Sandsend, 1900, 1955. |
| Guisborough, 1906. | Scarborough, 1882, 1897, 1904, 1943. |
| Hackness, 1936. | Sleights, 1914, 1961. |
| Hawnby, 1958. | Slingsby, 1947. |
| Hayburn Wyke, 1891, 1927. | Staithes, 1896. |
| Helmsley, 1884, 1923, 1953. | Stokesley, 1928. |
| Hole of Horcum, 1895, 1929. | Terrington, 1898. |
| Hovingham, 1935. | Thirkleby Park, 1887, 1902. |
| Hutton-le-Hole, 1937. | Thirsk, 1882, 1902, 1948. |
| Ingleby Greenhow, 1899. | Thornton-le-dale, 1922, 1944. |
| Kirby Moorside, 1893, 1910, 1959. | Whitby, 1885, 1894. |
| Loftus-in-Cleveland, 1905, 1952. | Wombledon, 1940. |
| | Wykeham, 1901, 1945. |
| | Yearsley Dam, 1951. |
| | York, 1883, 1900, 1942. |

VICE-COUNTY 63—South-West Yorkshire.

- Askern, 1886, 1893, 1906, 1912, 1926, 1938, 1959. Holmfirth, 1889.
Horbury, 1925
- Balne Pond, 1948. Lindrick Common and Anston Stones
Wood, 1885, 1947, 1955.
- Barnsley, 1880, 1899, 1905, 1909, 1943. Marsden, 1880, 1936.
- Bawtrey, 1902. Norland Moor, 1877.
Nostell Priory, 1877.
- Bingley, 1922. Penistone, 1892, 1923, 1935.
- Bradfield, 1950. Ripponden, 1933.
- Bretton Park, 1890, 1953. Roche Abbey, 1884, 1896, 1911, 1941,
1955.
- Cawthorne, 1928. Ryhill, 1919.
- Conisborough, 1937. Saddleworth, 1888, 1931.
- Crosshills, 1917. Saltaire, 1877.
- Crossland Hall (Nr. Huddersfield), 1900. Skelmanthorpe, 1897.
Sheffield, 1881.
- Deanhead, 1951. Snaith, 1882.
- Dewsbury, 1890. Stainborough, 1957.
- Doncaster, 1883, 1897, 1898, 1901, 1920, 1932, 1937. Stockmoor, 1942.
- Earby, 1924. Thorne, 1881, 1907, 1946.
- Farnley (Leeds), 1904. Thunder Bridge (Huddersfield), 1940.
Todmorden, 1954.
- Ferrybridge, 1894. Wakefield, 1882.
- Gargrave, 1960. Wentbridge, 1916, 1938, 1956.
- Goole, 1877, 1895, 1934. Wentworth, 1921.
- Gunthwaite, 1961. Wharncliffe, 1878, 1903.
Worsborough and Rockley, 1949.
- Hatfield Chace, 1887, 1952.
- Hampole, 1908.
- Harden Moss, 1911.
- Haworth, 1944.
- Hebden Bridge, 1879, 1904, 1914, 1930, 1945.

VICE-COUNTY 64—Mid-West Yorkshire.

- Aberford, 1936, 1941. Fairburn, 1934, 1960.
- Appletreewick, 1895. Giggleswick, 1943.
- Arncliffe, 1907, 1941. Grantley Hall, 1956.
- Arthington, 1911. Grassington, 1882, 1891, 1900, 1927,
1945.
- Askham Bog, 1879, 1900, 1921.
- Austwick, 1928, 1940, 1954.
- Bentham, 1935. Hambleton (Selby), 1878, 1931.
- Bishop Wood, Selby, 1914, 1959. Harrogate, 1879, 1889, 1906, 1949.
- Blubberhouses, 1885, 1937. Hellifield, 1893, 1896, 1929.
- Bolton Abbey, 1916. Horton-in-Ribblesdale, 1907, 1930, 1942.
- Bolton Percy, 1943.
- Boston Spa, 1880, 1897. Ilkley, 1878, 1946.
- Brimham Rocks, 1902. Ingleton, 1879, 1906, 1911, 1949.
- Buckden, 1904. Knaresborough, 1894, 1914.
- Burnsall, 1913. Litton, 1954.
- Burton Leonard, 1947.
- Cawood, 1941. Malham, 1883, 1890, 1910, 1925, 1948.
- Clapham, 1898, 1908. Middlesmoor, 1923.
- Clitheroe, 1922.
- Collingham, 1953.
- Cowthorpe, 1903. Newton-by-Bowland, 1900.
North Stainley, 1939.

VICE-COUNTY 63—Mid-West Yorkshire—*continued*

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|---------------------------------------|------------------------------|
| Otley, 1883, 1926. | Sherburn, 1884. |
| Pontefract, 1878. | Skipton, 1881, 1920, 1932. |
| Pateley Bridge, 1886, 1919, 1957. | Slaidburn, 1961. |
| | Swillington Ings, 1944. |
| Ramsgill, 1938. | Tadcaster, 1899. |
| Ripon, 1896, 1905, 1914, 1933, 1955. | Thorp Arch, 1951. |
| Saxton, 1924. | Wetherby, 1877, 1901. |
| Settle, 1878, 1892, 1914, 1917, 1958. | Winterburn and Hetton, 1951. |
| Selby, 1879. | |

VICE-COUNTY 65—North-West Yorkshire.

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|----------------------------------|---|
| Arkengarthdale, 1900, 1920. | Masham, 1880, 1901. |
| Askrigg, 1905, 1914, 1934. | Middleham, 1916, 1926. |
| Aysgarth, 1893, 1922. | Middleton-in-Teesdale, 1910, 1925. |
| | Muker, 1890. |
| Bedale, 1923. | Northallerton (for Ainderby), 1946. |
| Boroughbridge, 1885, 1942, 1945. | |
| Bowes, 1903, 1959. | |
| Carperby, 1955. | Reeth, 1900, 1920. |
| Colsterdale, 1958. | Redmire, 1940. |
| Cotherstone, 1897. | Richmond, 1881, 1895, 1928, 1956. |
| Croft, 1924. | Rokeby and Barnard Castle, 1892, 1917, 1930. |
| Dent, 1904, 1921, 1933, 1944. | |
| East Witton, 1949. | Scotch Corner, 1947. |
| Garsdale Head, 1929, 1948. | Sedbergh, 1887, 1894, 1902, 1909, 1927, 1932, 1938, 1961. |
| Grinton, 1953. | |
| Hawes, 1884, 1919, 1936. | Upper Swaledale, 1937. |
| | Upper Teesdale, 1889, 1939. |
| Leckby Carr, 1891, 1908, 1952. | West Burton, 1951. |
| Leyburn, 1888, 1898, 1931, 1957. | West Tanfield, 1912, 1935, 1954. |
| Langton-on-Swale, 1960. | |

Meetings held outside Yorkshire.

- Barton-on-Humber
Lincolnshire, 1911. Joint meeting with Lincolnshire Naturalists' Union.
- Brigg, Lincolnshire, 1895. Joint meeting with Lincolnshire Naturalists' Union.
- Kirkby Stephen, 1913.
- Scunthorpe, Lincolnshire, 1910. Joint meeting with Lincolnshire Naturalists' Union.
- Tebay, 1912.
- Worksop, 1885.

NATURE CONSERVATION IN YORKSHIRE

E. W. TAYLOR

In the past it has sometimes happened that a landowner has turned part of his estate into a Nature Reserve and in the county of Yorkshire one can instance Charles Waterton, who inherited the Walton Park estate near Wakefield in 1806 and much more recently the late W. H. St. Quintin at Scampston Hall, near Rillington. Both these enlightened landowners protected the wild life on their estates, but such efforts were by their very nature transitory.

The earliest attempts to protect the wild life of an area on a more permanent basis were those made by the Royal Society for the Protection of Birds, founded in 1889 and the Society for the Promotion of Nature Reserves, founded in 1912. The first reserve created by the former was at Minsmere in 1946 and by the latter at Wood Walton Fen in 1919.

The first of the County Naturalists' Trusts was founded in Norfolk in 1926, and this was the position at the outbreak of the second world war. During the war years, in the interest of food production and national necessity, heaths, commons and moorlands were ploughed up, swamps and marshes were drained and woodlands were felled on a large scale. At this time many areas of great interest to naturalists were lost for ever and the national conscience was stirred.

With the active encouragement of the R.S.P.B. and the S.P.N.R., natural history societies all over the country were asked to list areas of special significance. In this the Yorkshire Naturalists' Union played an important part. Many of the Yorkshire sites were listed in the report of the Wild Life Conservation Special Committee which published its findings in July, 1947, and grouped under the heading of Local Nature Reserves and Sites of Special Scientific Interest (S.S.S.I.). In Appendix 5 a list was given of recommended conservation areas, which included for Yorkshire the Howardian Hills, the coast around Flamborough, and the South Pennines; in Appendix 6 was a list of proposed Nature Reserves which included Askham Bog, Skipwith Common and Colt Park Wood near Ribbleshead.

The Yorkshire Naturalists' Trust, the second County Trust to be formed, was launched in 1946 to become possessed of about half of Askham Bog with the right to administer the whole property. It therefore anticipated the setting up of the Nature Conservancy by Royal Charter in March, 1949.

The Lincolnshire County Trust, founded in 1948, was the next and the evidence of stirrings in other counties decided the Society for the Promotion of Nature Reserves to organise a conference at Whiteslea Lodge on Hickling Broad in September, 1957, at which Lord Hurcomb presided. This conference led directly to two very important developments. The first was the idea of a Council for Nature, which now, well established, carries on independently, and the second was the setting up of a Naturalists' Trusts' Sub-Committee which is now in a position to assist those engaged in the formation of further County Trusts, having even prepared a standard set of articles of association. There are now twelve County Trusts with five more in process of formation.

What the Yorkshire Naturalists' Trust has achieved

In 1946 about half of Askham Bog came unexpectedly into the market and was bought by a speculator who hoped to more than recover the cost by the sale of timber for pulping. He soon discovered that the real problem was to remove the timber after felling and he looked around for a possible purchaser. Fortunately Arnold Rowntree, on behalf of the Joseph Rowntree Charitable Trust, and Sir Francis Terry, were anxious to prevent this desecration of a well-known haunt of naturalists and combined together to purchase the freehold. The problem then was that of placing the property in safe hands and securing its future administration in the interests of Nature Conservation. It was then decided to form a County Naturalists' Trust, after the pattern already set in Norfolk and much help was received from that source, particularly as regards the drawing up of the Articles of Association. An approach was then made to the late D. Lycett Green, who owned the other half of the Bog, and he very generously placed the administration of his half also in the hands of the new Trust.

In 1954 the Yorkshire Naturalists' Trust was offered two woodlands just south of the county boundary by the owners, Drs. Green and Dyson of Haxey. One, called 'Bird's Wood', was of about nine acres extent and just inside Lincolnshire,

and the other called 'Whin Covert', of about the same extent, was just within the Nottinghamshire border. The Council of the Trust decided that both should be preserved but doubted its ability to administer them successfully from York. When, therefore, the Lincolnshire Naturalists' Trust was formed in 1948 it was decided to advise the owners to transfer them to our neighbouring Trust and this was arranged to the satisfaction of all.

In 1956 many nature lovers in the York area were disturbed to learn that a very beautiful and well-known woodland, known as the 'Moorlands', was for sale and that a firm of timber merchants was hoping to buy it and extract the timber. This woodland had belonged to a well-known York family who had planted it with a great variety of forest trees and a remarkable collection of rhododendrons and azaleas. It was found, on enquiry, that the owners, while wishing to dispose of the property, were also anxious that it should be preserved, if this was found to be possible. They were in fact prepared to accept a considerably lower price to secure this and agreed to dispose of the 18 acres to the Y.N.T. on very reasonable terms. The first appeal to members of the Trust was then organised and a sum in excess of the purchase price was fixed as the target on the understanding that any money in excess would be placed in a special fund and used only to develop that property. The appeal was most successful and it is interesting to record, six years later, that the fund is almost intact and that the property has meanwhile contributed more than £1,000 to its own maintenance costs. This has come about through voluntary gifts made by visitors at the gate and through the sale of trees, particularly Norway Spruce, at Christmas time.

At the time the purchase of the 'Moorlands' was criticised in some quarters as it was not in its natural state but it actually brought the Trust many new members, gave pleasure to some thousands of visitors each year and made no demands on Trust funds.

The Spurn promontory has for long been recognised as an area of the greatest interest to field naturalists and following the work on bird migration carried on there by Dr. Eagle Clarke at the turn of the century, its importance as a resting place for migrant birds was well established. During this period surveys have also been made of its characteristic animal, plant and insect life. It has also been of great interest to coastal geographers as perhaps the most remarkable sand spit formation in the country.

During the first world war Spurn became of considerable military importance and the War Department at that time took over the promontory and fortified it. In 1946 a small group of members of the Yorkshire Naturalists' Union approached the military authorities and succeeded in renting Warren Cottage and establishing there the Spurn Bird Observatory. This station, the first on the mainland, has since been continuously manned by volunteers during the spring and autumn migrations. Heligoland traps have been built and up to the present approximately 40,000 migrant birds of some 130 species have been ringed and released; thus adding much to our knowledge of migration routes.

All concerned hoped that the day would come when the promontory might become a Nature Reserve but there seemed little likelihood, until it was learnt that the War Department were considering withdrawing and that it might be offered for sale. The Trust made contact with the W.D. land agents and asked to be allowed to bid if a sale materialised and in this it was strongly supported by the Nature Conservancy. In due course the Trust was notified that a meeting had been arranged to discuss any problems that might arise in the disposal, and this was timed for August 6th, 1958, and held in the conference room of the Ministry of Housing and Local Government. There is no need here to give a list of the many interested parties that attended but they numbered nineteen and, of course, included the Ministry of Works, Trinity House, the Royal National Lifeboat Institute, the Humber Conservancy, the three services and the Local Authorities.

It soon appeared that no one of the nineteen would undertake the responsibility of maintaining the sea defences though all hoped that access to Spurn Head by road would be preserved. At the conclusion the Trust was informed that it could purchase the freehold if a price could be agreed and that the best plan would be for both the interested parties to make a separate valuation. A gap existed between the two, that of the Trust being the lower, but in January, 1959, Mr. Burstall, who had acted throughout as the Trust's legal representative, wrote to say that agreement had been reached. On March 23rd the W.D. representative met those of the

Trust at Spurn and the boundaries were agreed prior to the handing over of the property to the Y.N.T. on April 6th, 1959.

The next problem was to raise the purchase price but the Trust had not been idle in the meanwhile and very considerable donations had been promised, particularly by the Joseph Rowntree Village Trust, the Society for the Promotion of Nature Reserves and the Spurn Bird Observatory. In all more than 230 donations were received from individuals and organisations and the target figure, which aimed at a reserve fund of £1,000 in addition to the purchase price, was exceeded. This meant that the Spurn Nature Reserve could start off under good auspices with a fund for future development.

In the meanwhile there was much to be done with numerous leases to be drawn up and agreements to be reached. The War Department offered to collect the rents and to pay the outgoings until the conveyance could be prepared and then in September, 1960, this important document came to hand and the Trust was at last firmly possessed of the Spurn promontory together with some hundreds of acres of mud flats, previously owned by the Admiralty.

The resident population at Spurn is about thirty-five, confined mainly to the ten lifeboat cottages at Spurn Head, and here there is a recreation room and a chapel dedicated to St. Andrew. There are many buildings, including the old inn, and the whole is dominated by the lighthouse.

A Spurn Management Committee was set up, under the chairmanship of Mr. R. Chislett, and one of the first decisions was whether or not to permit visitors in cars. As the War Department had allowed this it was thought unwise to close the promontory but in order to keep down the numbers it was decided to make a small charge at the entrance gate; the proceeds going to the Spurn Fund.

In March, 1960, a warden, Mr. P. Mountford, was appointed, to represent both the Y.N.T. and the Spurn Bird Observatory and installed in a bungalow near Warren Cottage.

The clerical work involved for the officers of the Trust and the Trust's solicitor, Mr. Burstall, in connection with the taking over of the promontory was very great and far exceeded that of organising the appeal. It was however completed without outside help and to-day it remains only to tie up a few loose ends.

During the fifteen years of its existence the Trust has examined numerous sites in all parts of the county and accumulated much information that will be of great value in the future. Its policy then is to wait for the favourable moment, as land-owners do not easily decide to dispose of portions of their estates and must be approached with great tact and understanding.

YORKSHIRE NATURALISTS' UNION PRESIDENTS

The appointment of Presidents of the Union dates from the reorganisation and change of title from West Riding Consolidated Naturalists' Society in 1877.

1876-77	Rev. Wm. Fowler, M.A.
1878-79	H. Clifton Sorby, LL.D., F.R.S., Pres.G.S.
1880-81	Prof. W. C. Williamson, F.R.S.
1882-83	J. G. Baker, F.R.S.
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1921	H. B. Booth, M.B.O.U., F.Z.S.
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1948	Wilfrid Backhouse Alexander, M.A.
1949	Lorna I. Scott M.Sc., F.L.S.
1950	A. Raistrick, M.Sc., Ph.D., F.G.S.
1951	Henry Whitehead, B.Sc.
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1953	E. W. Mason, M.A., M.Sc., F.L.S.
1954	Rev. T. Basil Kitchen, F.R.E.S.
1955	E. Wilfred Taylor, C.B.E., F.R.S., M.B.O.U.
1956	J. Grainger, B.Sc., Ph.D.
1957	P. F. Holmes, M.A.
1958	Alfred Hazelwood
1959	H. Henson, D.Sc., F.R.E.S.
1960	Prof. D. H. Valentine, M.A., Ph.D., F.L.S.
1961	Rt. Hon. Lord Hurcomb, G.C.B., K.B.E.

Yorkshire Naturalists' Union.

President :

THE RT. HON. LORD HURCOMB, G.C.B., K.B.E.

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 and Divisional Secretary :

Miss C. M. ROB, Catton Hall, Thirsk.
Telephone: Topcliffe 224.

Divisional Secretary :

Mrs. A. C. M. DUNCAN, Bransty, Rupert Road, Ilkley.
Tel.: Ilkley 683.

The 575th Meeting

WILL BE HELD AT

SLAIDBURN

V.C. 64

From Saturday, MAY 20th
to Monday, MAY 22nd, 1961

HEADQUARTERS.—Hark to Bounty Inn, Slaidburn, near Clitheroe. Tel.: Slaidburn 246. Proprietress: Mrs. Harris. 35/- per day.

Other Accommodation: Youth Hostel—King's House, Slaidburn.

Whitewell Hotel, Whitewell, near Clitheroe. Tel.: Dunsop Bridge 222.

Bed and Breakfast, 22/6; Dinner, 12/6. Packed lunch available.

It may be possible to get limited accommodation in private houses. Please write to the Divisional Secretary if in any difficulty.

TEA AND MEETING.—Tea at the Hark to Bounty Inn on Monday, May 22nd, at 5-0 p.m. Chicken and salad tea, 8/6; afternoon tea, 3/6. **Tea should be ordered through the Divisional Secretary by May 13th.** (Residents at the Inn may tell Mrs. Harris on their arrival on Friday.) After tea there will be a meeting for the presentation of reports and other business.

TRANSPORT FACILITIES.—Owing to the difficulty of public transport, it would be greatly appreciated if members with cars could offer lifts to those without their own transport.

As the bus from Clitheroe arrives too late for a suitable start in the morning, members expecting to arrive by bus should inform the Divisional Secretary so that arrangements may be made for them to be met by car and catch up with the party.

Train times connecting with the Clitheroe-Slaiburn bus should be checked nearer the time.

Slaiburn may be reached by car *via* Long Preston or Clitheroe.

RIBBLE MOTOR SERVICES	a.m.	p.m.
Skipton (Waller Hill Bus Station)	8-55	4-55
Clitheroe (White Lion)	9-53	5-53

		p.m.	p.m.
Clitheroe (White Lion)		5-46	7-46
Skipton (Waller Hill Bus Station)		6-43	8-43

BOUNTY MOTOR SERVICES	Weekdays	Sundays	Weekdays
	a.m.	a.m.	p.m.
Clitheroe Station	10-45	11-00	6-00
Whitewell	11-20	11-35	6-35
Dunsop Bridge	11-30	11-45	6-45
Slaiburn	11-45	12-00	7-00

	Weekdays	Weekdays and Sundays
	p.m.	p.m.
Slaiburn	4-40	6-00
Dunsop Bridge	4-55	6-15
Whitewell	5-05	6-25
Clitheroe Station	5-40	7-00

MEET AS FOLLOWS:

Saturday and Monday: Headquarters at 10-30 a.m.

Sunday: Dunsop Bridge at 11-0 a.m.

Route instructions will be left at headquarters on Saturday and Monday, and at 1 Forestry Houses, Dunsop Bridge (Mr. M. Murray) on Sunday.

MAP.—Ordnance Survey 1 inch, Map No. 95.

THE AREA.—This is very attractive, but the Slaiburn district is not easily accessible from other parts of Yorkshire and has been visited only infrequently by the Union. Previous meetings were in 1922, 1909 and 1896.

The area to be visited extends to the western extremity of V.C. 64, the River Hodder from Whitewell southwards forming the Yorkshire-Lancashire boundary. It is proposed to include in the excursions the region round Stocks Reservoir, the fells north of Dunsop Bridge, and the Hodder Valley between Slaiburn and Whitewell.

Two articles in *The Naturalist* 1913 on the orchids, and on the alien plants of the Upper Hodder Valley, by Miss Peel of Newton are of interest to the botanists.

PERMISSIONS.—We are very grateful to Lt. Col. Cresswell King-Wilkinson of Slaiburn for allowing us to visit the Dunsop Estate, and to the Forestry Commission for permission to visit the woodlands in the Slaiburn district. Every care should be taken to avoid damage especially by fire. In the vicinity of Stocks Reservoir members must keep to the footpaths, as no one is allowed to go within the boundary of the reservoir. No dogs are allowed, and no smoking in the woodlands.

FLOWERING PLANTS (W. A. Sledge).—The flora of the Bowland district, though less rich than that of Craven, is full of interest. Grits, shales, shales-with-limestone and limestone give a geological diversity which is reflected in the vegetation. Grit rocks and peat cover most of the high ground and in addition to the species characteristic of such moorland soils, Cowberry and Cranberry are widespread and Cloudberry is plentiful on Botton Head Fell. *Listera cordata* has been recorded for more than one locality and *Andromeda polifolia* is locally plentiful in several of the swampy mosses. *Trialialis* is recorded from Waddington Fell and at

Whitendale *Wahlenbergia hederacea* grows in some quantity and also, in smaller quantity, near Bowland Trough.

The limestone about Newton and Dunnaw Cliff between Newton and Slaidburn will repay investigation. *Potentilla crantzii* has been recorded from here but needs confirmation. Globe flower, Mealy Primrose, Bog-bean, Rock-rose, Spindle Tree, Buckthorn, Bird Cherry, Hedge Bedstraw, Melancholy Thistle, Herb Paris, *Geranium sylvaticum*, *Saxifraga granulata*, *Hypericum maculatum*, *Stellaria nemorum* and *Sedum Telephium* all grow in this area and wild Daffodils were seen here when last the Union visited the district at Easter, 1922.

Other species recorded for the Bowland area include *Thalictrum flavum*, *Arabis hirsuta*, *Cardamine amara*, *Hesperis matronalis*, *Viola odorata*, *V. hirta*, *V. reichenbachiana*, *Arenaria verna* (Ashknott lead-mine), *Sagina nodosa*, *Genista anglica*, *G. tinctoria*, *Potentilla palustris*, *Scabiosa columbaria*, *Scrophularia umbrosa*, *Senecio 'sarracenicus'*, *Salix pentandra*, *S. purpurea*, *S. phylicifolia*, *Orchis purpurella*, *Leucorchis albidia*, *Habenaria chlorantha*, *Juncus diffusus*, *Rhynchospora alba*, *Carex pendula* (Whitewell), *Poa compressa*, *Asplenium adiantum-nigrum*, Parsley Fern (Brennand Fell), Oak and Beech Ferns, Adder's Tongue Fern and Moonwort.

BRYOLOGY (G. A. Shaw).—The Bryophytes of the Hodder Valley are little known, and bryologists should list all species noted.

On a visit to the Whitewell area in 1949, my best find was *Zygodon conoideus* (Dicks.) Hook. & Tayl., new to V.C. 64, on Elders below Whitewell. This was a very scanty gathering and search should be made for more. Other species noted then included *Tortella tortuosa* (Hedw.) Limpr., *Trichostomum brachydontium* Bruch., *Orthotrichum cupulatum* Brid., *Neckera crispa* Hedw., *N. complanata* (Hedw.) Hübén., *Barbula spadicea* Mitt., *Eucladium verticillatum* (With.) B. & S., *Orthothecium intricatum* (Hartm.) B. & S., *Cratoneuron commutatum* (Hedw.) Roth., and *Nowellia curvifolia* (Dicks.) Mitt.

It might be borne in mind that Wheldon and Wilson recorded *Amblystegium compactum* (C.M.) Aust. from Dinkling Green which is only a mile or so away on the Lancashire side of the river.

VERTEBRATES (J. K. Fenton).—A large variety of habitats should produce a good list of birds. It might be useful particularly to ascertain the present status of Corncrake (a possibility), Nightjar, Twite and Lesser Whitethroat, as they were noted during a previous visit of the Union over fifty years ago. Although none were actually seen in 1909, Little, Tawny, Barn, Long-eared and Short-eared Owls will all probably be present.

Stocks Reservoir, built during the 1930's, although showing good numbers of wintering duck has only a small breeding population. Terns, on passage, have been seen there, and most of the commonest gulls should be seen there or on the fells.

The Forestry Commission are recreating a Forest of Bowland, despite which two Blackcock leks were discovered last year. All typical dale-breeding species should be met with, including breeding Oystercatcher and possibly Ringed Plover. Nuthatch should be looked for, it has been seen in Slaidburn and breeds in nearby Ribblesdale.

Otter, Fox and Badger are all present. Bats can often be seen in Slaidburn, their species should be ascertained.

CONCHOLOGY (Mrs. E. M. Morehouse).—There are very few recent records and the following list of molluscs is by W. Dennison Roebuck, 1885.

Vertigo edentula, Bashall Moor wood; *Limnea palustris*, near Cracow Hill; *Euconulus fulvus*, Coates Rakes Bridge; *Arion subfuscus*, Hammerton Hall; *Balea perversa*, Slaidburn; *Hygromia granulata*, Angerham and Meanley; *Azeca tridens v. crystallina*, Whitewell; *Z. glaber*, Whitewell and Great Mytton; *Planorbis spirorbis*, Grunsagill Bridge.

Helix rupestris, *H. arbustorum*, *Clausilia laminata*, *V. radiatula* on limestone.

V. nitidula v. nitens at Stocks; *V. pura*, *H. hispida v. hispidosa*, *H. hortensis*, *V. alliaria*, *H. rufescens*, *L. pereger*, *L. truncatula*, *Ancylus fluviatilis*, *V. cellaria*,

V. crystallina, *C. rugosa*, *Agriolimax agrestis*, *Arion ater*, *A. hortensis*, *A. circumscriptus*, *A. minimus*, *Pupa cylindrica*, *H. rotundata*.

ENTOMOLOGY AND FRESHWATER LIFE (A. Brindle).—The Y.N.U. has chosen an excellent place for the Whitsuntide meeting, for the Hodder and its tributaries and their banks have a rich fauna. Crayfish are common and ammocoete larvae of lamprey can be found in sand near the bank. All the spring stoneflies are common and *Brachyptera risi* (Mort), *Chloroperla torrentium* (Pict.) and *C. tripunctata* (Scop.) occur. Mayflies are plentiful all along the river and include *Baetis rhodani* (Pict.) and *B. pumilus* (Burm.). Caddisflies abound, among them *Ecclisopteryx guttulata* (Pict.); *Philopotamus montanus* (Don.) and *Wormaldia occipitalis* (Pict.) are found along the smaller streams. The beautiful, semi-aquatic giant lacewing, *Osmylus fulvicephalus* (Scop.) occurs along the riverside, and the elegant beetle *Diancus coeruleus* (Gyll) is common. Diptera are very good and plentiful and include *Gonomyia lateralis* (Macq.), *Hexatoma fuscipennis* (Curt.), *H. bicolor* (Mg.), *Dicranota robusta* (Lundst.) and *Pedicia occulta* (Mg.) among the many Tipulidae. *Hilara matrona* (Hal.) and *H. thoracica* (Macq.) are found in small 'cloughs' by the river, and marshy ground produces *Porphyrops riparia* (Mg.), *Argyra argentina* (Mg.) and *Phacomomyia fuscipennis* (Mg.). *Platyparella discoidea* (F.) may be found walking about on the leaves of *Campanula latifolia*, and the local *Atherix ibis* (F.) should be present, but it might be a little early to find the egg clusters. The females of *A. ibis* are gregarious and lay their eggs on twigs overhanging the river and then die in position, leaving a mass of dead flies and eggs to form a cluster on the twigs.

NEXT MEETING.—June 3rd, 1961. Gunthwaite, V.C. 63.

Yorkshire Naturalists' Union.

President:

THE RT. HON. LORD HURCOMB, G.C.B., K.B.E.

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:

Miss C. M. ROB, Catton Hall, Thirsk.
Telephone: Topcliffe 224.

Divisional Secretary:

R. S. ATKINSON, F.Z.S., 46 White Hill Avenue, Barnsley.

The 576th Meeting

WILL BE HELD AT

GUNTHWAITE

V.C. 63

On Saturday, JUNE 3rd, 1961

HEADQUARTERS.—The Village Hall, Cawthorne. This is situated at the opposite end of the village to the parish church, between the toll bar and the park gates.

TEA AND MEETING.—Members of the Barnsley Naturalists' Society are arranging to serve potted meat and salad sandwiches with cakes at a cost of about 2/6 per person. It is important that **those requiring tea should notify the Divisional Secretary not later than May 27th.** Tea at 5-0 p.m. followed by a meeting for the presentation of reports and other business.

TRANSPORT FACILITIES.—Buses: from Huddersfield (Lord Street), route 33 to Barnsley on the hour. Alight at Denby and take the road *via* Gunthwaite Gate to the Hall. Routes 36 or 55 to Barnsley leave at 35 mins. past and 50 mins. to each hour. Alight at Daking Brook, which is between Denby Dale and Cawthorne. Walk up the lane called Coach Gate.

From Barnsley the Huddersfield (*via* Cawthorne) bus routes 36 and 55, leaving the bus station at 5 and 20 mins. past each hour. Alight at Daking Brook. It is advisable to book single as the return buses pass through Cawthorne.

For those coming by car Gunthwaite can be reached from the main Huddersfield-Barnsley Road at Upper Denby, Denby Dale or Daking Brook. There is also a lane leading off the Huddersfield-Penistone Road just below Ingbirchworth; it is roughly opposite the intake end of Scout Dike Reservoir. It is hoped that members having cars will give a lift back to headquarters for tea.

AREA TO BE VISITED.—As the area to be visited is somewhat scattered it is suggested that those able to arrive in the morning should meet at Gunthwaite Hall Farm at 11-0 a.m. Members of the Barnsley Naturalists' Society will act as leaders. Those arriving in the afternoon should meet at Daking Brook at 3-30 p.m. Mr. T. T. Seago writes: Gunthwaite has many associations of historical interest, the estate being for centuries the property of the Bosville family. The famous barn was built c. 1550 and is still in a good state of preservation; it measures 55 × 15 yards, has eleven bays and three threshing floors. Also of great interest is the water mill which is still in working order; there has been a mill on the site since the time of Edward III. In days gone by Gunthwaite was known as a spa being visited by invalids on the first Sunday in May when the waters were believed to be particularly beneficial. The spa well still provides water which is taken by a few local residents. In Ronscliff Wood evidences of a former industry, silver mining, may still be seen.

MAPS.—The best map of the area is the 2½ inch Sheet 44/20. The one-inch map is Sheet 102, the Huddersfield area.

PERMISSIONS.—Messrs. Lockwood & Elliott Ltd., have granted permission to visit their land provided the rights of the tenant farmers are respected, no gates left open, fences damaged, etc. Messrs. Job Earnshaw & Bros. will allow members to visit the woodlands they own. These are quite extensive and are mainly those near the Hall, Gadding Moor and the main road. No dogs are allowed.

ORNITHOLOGY (R. S. Atkinson).—Gunthwaite lies in an attractive valley stretching from the edge of the moors at Ingbirchworth to parkland at Cawthorne. On the moorland the Curlew breeds and the call of the common Sandpiper and Redshank can be heard near the reservoirs. These attract Mallard, Teal, Great Crested Grebe and other waterfowl. Herons can often be seen on their way to Scout Dike Reservoir. On the dam at Gunthwaite the Little Grebe, Moorhen and Mute Swan are usually present.

In the woodlands are Bullfinch, Jay, Woodpecker, tree Creeper and various members of the tit family. The Kingfisher is occasionally seen near the stream. Yellow Hammers are familiar sights on the telegraph wires but the Cuckoo is now heard less frequently. Four species of Owls, Barn, Tawny, Little and Long-eared, are all recorded from this area as are Willow Warbler, Blackcap, Wheatear and Redstart.

MAMMALS (R. S. Atkinson).—The Red Squirrel is seen quite frequently and Foxes are very common. The Common Shrew is abundant; the Pigmy Shrew has been seen on Gadding Moor. Stoats and Weasels are common but the Badger is rare. The Noctule, Pipistrelle and Long-eared Bats occur.

ENTOMOLOGY (J. H. Seago, B.Sc.).—The Gunthwaite area has never been systematically worked so few records are available. There is every reason to suppose that a thorough investigation would be rewarding since the region is quite unspoilt and atmospheric pollution much lower than in adjacent areas of south Yorkshire.

LEPIDOPTERA.—Among the butterflies *Pararge megera* (Wall), *Polyommatis icarus* (Common Blue), *Lycaena phlaeas* (Small Copper), and *Ochlodes venata* (Large Skipper) are abundant. *Celastrina argiolus* (Holly Blue) occurs in small numbers and this is one of the few places in south Yorkshire where this species may be seen regularly. *Argynnis lathonia* (Queen of Spain Fritillary) has been reported.

The most interesting moths recorded are *Deilephila porcellus* (Small Elephant Hawk), *Anaitis plagiata* (Treble Bar), *Epirrhoe tristata* (Common Carpet), *Cidaria fulvata* (Barred Yellow), *Abroxas sylvata* (Clouded Magpie), *Zygaena lonicerae* (Narrow Bordered Five Spot Burnet), *Z. filipendulae* (Six Spot Burnet), *Procris stactices* (Forester), and a smoky form of *Hepialus hecta* (Gold Swift). Two old records are of especial interest, *Tethea fluctuosa* (Satin Carpet) and *Phylometra viridaria* (Small Purple Barred). The former used to occur fairly generally in the woods around Barnsley and may still linger in the more remote parts of the district. *P. viridaria* was once common on Gadding Moor where its foodplant *Polygala vulgaris* (Common Milkwort) is still common.

FLOWERING PLANTS (C. Jukes).—Among the more common plants occurring in the area are *Agrimonia eupatoria* (Common Agrimony), *Teucrium scorodonia* (Wood Sage), *Valeriana officinalis* (Valerian), *Circaea lutetiana* (Enchanter's Nightshade), *Galium verum* (Lady's Bedstraw), *Geranium robertianum* (Herb Robert), *Lychnis flos-cuculi* (Ragged Robin), *Linaria vulgaris* (Yellow Toadflax), *Anagallis arvensis* (Scarlet Pimpernel), *Lysimachia nemorum* (Wood Pimpernel), *Pimpinella saxifraga* (Burnet Saxifrage), *Asperula odorata* (Woodruff). A look-out should be kept for *Genista tinctoria* (Dyer's Greenweed) last recorded in 1953.

Among orchids, *Listera ovata* (Twayblade), *Epipactis helleborine* (Common Helleborine), *Orchis maculata* (Spotted Orchis) and *Dactylorhiza incarnata* have been seen. The *Carex* family is represented by *C. laevigata*, *panicea*, *nigra*, *ovalis*, *remota*, *flacca* and *echinata*. These occur in the woods near the many dykes.

Many of these wooded valleys are rich in ferns and among those recorded are *Phyllitis scolopendrium* (Hart's Tongue), *Asplenium ruta-muraria* (Wall Rue), *Athyrium filix-femina* (Lady), *Dryopteris borreii* (Scaly Male), *Polystichum aculeatum* (Hard Shield), *Thelypteris oreopteris* (Mountain), *Blechnum spicant* (Hard), *Polypodium vulgare* (Common Polypody) and *Dryopteris dilatata* (Broad Buckler).

BRYOPHYTA (E. Thompson).—This area which has several bogs, many streams and rocky patches as well as wooded ravines is known to be rich in bryophytes. Among those recorded there are *Acrocladium cuspidatum*, *Atrichum undulatum*, *Fissidens bryoides*, *F. adianthoides*, *Encalypta streptocarpa*, *Mnium affine*, *M. cuspidatum*, *Thuidium tamariscinum*, *Hookeria lucens*, *Thamnum alopecurum*, *Fissidens cristatus*, *Schistostega pennata*, *Aulacomnium androgynum*, *Bartramia pomiformis* and *Webera prolifera*.

MOLLUSCA (E. Thompson).—Snails are few but one wall harbours *Clausilia bidentata* and *Balea pervensa*. On this same wall the rare land planarian *Orthodemus terrestris* was once found. A careful search may well yield many new species for the area.

The Next Meeting will be on Saturday, June 17th, at Fylingdales, V.C. 62.

Yorkshire Naturalists' Union.

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Telephone: Topcliffe 224.

Divisional Secretary:

I. C. LAWRENCE, Esq., 60 Cambridge Road, Linthorpe, Middlesbrough.

The 577th Meeting

WILL BE HELD AT

SLEIGHTS for FYLINGDALES

V.C. 62

On SATURDAY, JUNE 17th, 1961

HEADQUARTERS.—The **County Cafe**, Main Street, Sleights. (Mrs. J. Sargeant). High Tea 6/6, Afternoon Tea 3/-.

Teas must be ordered in advance, please let the Divisional Secretary know before **June 10th** if you want to have tea, stating which tea you require.

MEETING.—Tea at Headquarters at 5.00 p.m., followed by a general meeting for reports on the day's work, election of new members and any other business.

TRANSPORT.—There is a train service to Sleights, but no trains fit in with the meeting times. Members who have to travel by train will have to stay overnight, in which case they should seek accommodation at Whitby. There is a regular bus service (United 91 or 92) from Whitby to Sleights.

The Divisional Secretary will help in this connection if ample notice is given.

From Middlesbrough the United service 65 leaves at 8.25 a.m. Passengers should alight at **Redgate Corner** (for Falling Foss) approx. 2.3 miles past Sneaton at 10.55 a.m.

Passengers from Scarborough (United service 65, 9.25 a.m. or 10.11 a.m.) should also alight here, Whitby passengers may meet the main party at this point. Return buses from Sleights to Whitby every 20 minutes. Please check the bus times.

The main party will meet at the **Car Park** near Sleights Station. The Whitby Naturalists have kindly offered to lead the sections and act as hosts for the day's excursion.

The party will leave by cars not later than 10-30 a.m. to the starting point on the Ruswarp/Hawsker road (B.1416) Redgate Corner, at the junction of the road to Falling Foss leaving this point at **11 a.m.**

ROUTE.—It is proposed to examine the area in the vicinity of **Fylingdale Moor** from where several becks run down to Falling Foss and into Littlebeck.

PERMITS.—As much of the area south of Falling Foss has been out of bounds to the public and only recently been opened by the War Ministry, permission is being sought to enter this section. Otherwise there is a public right of way to the north as far as Sleights and landowners will be contacted in case members wish to stray from the track.

MAPS.—Sheet 86, Ordnance Survey 1" to mile, Redcar and Whitby, and Sheets 45/80 and 45/90, $\frac{1}{2}$ " to mile, cover the area to be visited.

As already mentioned, Fylingdales Moor has been closed to the public for some years and only recently been de-controlled. An area of about four square miles to the south west at Lilla Rigg and Lilla Cross is taken over for the ballistic missile warning station now being constructed, and is closed. Very little has been known of the area it is proposed to visit, for the past twenty years, and the courses of Blea Hill and May Beck could prove interesting. From Falling Foss towards Sleights the valley is well wooded. The altitude ranges from 100 ft. at Sleights to 950 ft. at Foster Howes Rigg.

Much of the high ground is wet moorland, which with the wooded valleys should provide plenty of interest to all sections.

ORNITHOLOGY.—I. C. Lawrence: The sheltered wooded area is quite good for woodland birds, further up towards the moor it is probable many upland-type birds have found sanctuary under the protection of the War Dept. during the past years. Curlew, Redshank, Whinchat, Black-headed Gull, Merlin and Ring Ousel are known in adjacent areas.

MAMMALS.—Badgers and foxes occur in the woods, rabbits have come back and are increasing; on the higher moorland adders may be expected.

FLOWERING PLANTS.—C. M. Rob: The western of the two 10 km. grid squares has been very well worked, the total on the master card is 515 species, many of these are from the Goathland, Beckhole Sleights districts. The eastern square, 45/90, which includes Robin Hoods Bay has only 310 species on the master card and it should be possible to add to this without much difficulty. As the dividing line between the two squares cuts right through the area, the use of the larger scale maps is advisable. The true small burdock *Arctium minus* Bernh. has been found near Falling Foss, Yellow Archangel *Galeobdolon luteum* Huds. is on both squares; sixteen species of *Carex* have been recorded in the Sleights square against 4 in the Eastern one.

Very few records for the area occur in the Flora (Baker, North Yorks.) the total for the Esk drainage area is 642. This is for the whole 235 square miles; a further list is given in *Whitby Wild Flowers* (Reynolds, 1915), but here again there is little given for the district to be visited on this occasion.

Listera cordata, Lesser Twayblade, and *Myosotis brevifolia* should be looked for on the wet moorland.

The wooded valleys should be of interest to bryologists.

PREVIOUS VISITS.—The last visit of the Union to this district was in 1946; the one previous, at Easter, 1933. Reports of both meetings can be found in *The Naturalist*. That of the Easter weekend meeting (*Nat.*, 1933, pp. 131-136) gives a very full account of the area visited and the work done by the Sections.

The Next Meeting of the Union is at Newton upon Derwent, V.C. 61, Sunday, July 2nd, 1961.

Yorkshire Naturalists' Union.

President:

The Rt. Hon. LORD HURCOMB, G.C.B., K.B.E.

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:

Miss C. M. ROB, Catton Hall, Thirsk.
Telephone: Topcliffe 224.

Divisional Secretary:

Miss E. CRACKLES, 143 Holmgarth Drive, Bellfield Avenue, Hull.

The 578th Meeting

WILL BE HELD AT

NEWTON-UPON-DERWENT

V.C. 61

On SUNDAY, JULY 2nd, 1961

HEADQUARTERS.—Barmby New Inn, on the Hull-York Road, one mile and a half south-east of Wilberfoss. Ham and salad tea, 5/6; Afternoon tea, 3/-. **Tea should be ordered by post-card, a week in advance.** Write to Mrs. Maddock, Barmby New Inn, Wilberfoss, by June 24th.

TRAVEL.—There is a Sunday 'bus service between Leeds, York and Hull, also between Leeds, York and Bridlington. Buses of both services pass Headquarters.

Depart

Hull 8-30 a.m.

Leeds 8-5 a.m.

Arrive

Barmby c. 9-50 a.m.

Barmby 10-10 a.m.

York 9-20 a.m.

Return

From Barmby New Inn to York—5-50 p.m. and every hour.

From Barmby New Inn to Hull—6-10 p.m. and every hour.

Members should check 'bus times nearer the time of the meeting (East Yorkshire Motor Services Ltd., Anlaby Road, Hull). Members with transport difficulties and car drivers with vacant seats are requested to contact the Divisional Secretary as early as possible.

MEETING PLACE.—Barmby New Inn at 10.30 a.m.

ROUTE.—It is proposed to investigate part of Sutton Wood and marshy ground by the River Derwent. Detailed plans will not be made until later: a message will be left at Barmby New Inn for the benefit of late comers.

MAP.—The area is covered by the Ordnance Survey 1" map—Sheet No. 97.

PERMISSION.—The Forestry Commission has kindly granted permission for the investigation of Sutton Wood. Other land owners kindly prepared to allow access to their land so that marshy ground by the river can be explored include: Mrs. Stark of Manor House Farm, Elvington, Mr. F. Nicolson of Elvington and Mr. R. Shaw and partners of Elvington House, Elvington. Other permissions are being sought. Members should carry their membership cards with them. Dogs are not allowed and gates must not be left open. There must be **No Smoking** on Forestry Commission property and an undertaking has been made that there will be no damage to gates or fences and no disturbance of game or birds' nests.

THE DISTRICT AND PREVIOUS MEETINGS.—Lower Derwentland is covered almost entirely by aqueous deposits and the soils are non-calcareous and mostly sandy. Meetings of the Union held in nearby areas include Bubwith, 1937 (*Nat.* 1937, pp. 204-8 and Circular No. 404); Allertorpe Common (*Nat.* 1945, pp. 141-3; Circular No. 460).

FLOWERING PLANTS.—E. Crackles: During a recent visit to the Sutton Wood area, species noted included the following: Trailing St. John's Wort (*Hypericum humifusum* L.), Slender St. John's Wort (*Hypericum pulchrum* L.), Hairy St. John's Wort (*Hypericum hirsutum* L.), Sticky Mouse-ear Chickweed (*Cerastium glomeratum* Thuill.), Bog Stitchwort (*Stellaria alsine* Grimm.), Corn Spurrey (*Spergula arvensis* L.), Wood Sorrel (*Oxalis acetosella* L.), Purple Loosestrife (*Lythrum salicaria* L.), *Epilobium obscurum* Schreb., Water Violet (*Hottonia palustris* L.), Yellow Pimpernel (*Lysimachia nemorum* L.), Yellow Loosestrife (*Lysimachia vulgaris* L.), Small Bugloss (*Lycopsis arvensis* L.), Knotted Figwort (*Scrophularia nodosa* L.), Giant Bell Flower (*Campanula latifolia* L.), Sand Leek (*Allium scorodoprasum* L.), *Scirpus setaceus* L., Wood Sedge (*Carex sylvatica* L.), *Carex remota* L., *C. ovalis* Gooden., *Holcus mollis* L., *Calamagrostis epigejos* (L.) Roth., *Agrostis canina* L. and *Milium effusum* L.

On the occasion of the Y.N.U. 1937 Excursion, members investigated the eastern bank of the River Derwent between Bubwith and Ellerton and some most interesting discoveries were made. The most notable species recorded were: Water Chickweed (*Stellaria aquatica* (L.) Scop.), Marsh Stitchwort (*Stellaria palustris* Retz.), Parsley Water Dropwort (*Oenanthe lachenalii* G. C. Gmel.), *Juncus compressus* Jacq., *Carex pallescens* L., and *Bromus commutatus* Schrad.

Some uncommon arenophilous species are known to occur in the Allertorpe area, e.g.: Sheep's Bit (*Jasione montana* L.), Swine's Succory (*Arnoseris minima* (L.) Schweigg. and Koerte) and Glabrous Cat's Ear (*Hypochoeris glabra* L.) and it would be interesting to know if such species are more widespread in the area.

ORNITHOLOGY.—H. O. Bunce: Several April-May transects have been run through the area, therefore detailed notes on the July species will be interesting. Map references of males singing, particularly of Corn Bunting and Reed Warbler which are both scarce and local, also evidence of breeding of these and other species are needed.

ENTOMOLOGY.—J. Flint: This level country of the Vale of York is rich entomologically and offers ample scope for the study of most orders. The vegetation along the banks of the Derwent is likely to be most productive and Donaciine beetles should be found on the emergent vegetation.

TEA AND MEETING.—Tea at Headquarters at 5 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.

Yorkshire Naturalists' Union.

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G. A. SHAW, Esq., The Department of Botany, The University, Leeds 2.

Hon. General and Divisional Secretary:

Miss C. M. ROB, Catton Hall, Thirsk.

Telephone: Topcliffe 224.

The 599th Meeting

WILL BE HELD AT

SEDBERGH

V.C. 65

SATURDAY, JULY 15th and
SUNDAY, JULY 16th 1961

HEADQUARTERS.—The Bull Hotel, Sedbergh, Yorks. (Mr. and Mrs. Dalton). Bed and Breakfast 22/6. Packed Lunch approx. 5/-. Dinner 12/6. Sedbergh is a popular district and accommodation limited.

TRANSPORT.—Sedbergh is served by the Ribbles Bus Company, Highgate, Kendal. Members are asked to enquire about the services. The rail service to Sedbergh is no longer working; it is possible to get to either Garsdale or Kendal from Leeds. Members with spare car accommodation are asked to let the Divisional Secretary know if they are willing to give non-car owners a lift. Non-car owners should contact the Divisional Secretary who will try to arrange transport. Enquiries must be made in good time, last minute enquiries cannot be dealt with.

MAPS.—The Ordnance Survey Sheets 89 (Lancaster/Kendal) and 90 (Wensleydale) 1" maps cover the area. Sheets 34/69 and 34/79 2½" should be brought if possible.

MEET.—Headquarters 10-15 a.m. both days. Details of the routes to be followed will be left at the hotel to allow late comers to join up with the party.

Mr. L. P. Madge has kindly agreed to lead the party on Sunday, July 16th, and it is hoped that Dr. H. Frankland, of the Nature Conservancy will be present on one or both days.

PERMITS.—Dr. Frankland has kindly undertaken to get permission for the Rawthey Bridge area.

The Union has visited the Sedbergh district a number of times, the last occasion being 1938, other meetings were held in 1932, 1927 and 1909.

The 1938 Meeting was for the purpose of exploring Needlehouse Gill but the weather prevented this taking place, it is hoped to visit this area on Saturday,

July 15th, on Sunday, Cautley Spout and the ground round about will be the probable route.

The town of Sedbergh lies to the south of Howgill Fells. These fells, composed of Silurian rocks, rise to 2220 ft. at the Calf, near Cautley Spout. The fell tops are rounded, grassy, and sheep cropped. Cautley Spout is a well-known botanical locality. The River Rawthey forms the Yorkshire/Westmorland boundary for some miles above Rawthey Bridge on the Sedbergh-Kirby Stephen road, as far as Needle House. For recording purposes this is also the boundary of V.C. 65. Any records from across the boundary, are for V.C. 69.

The country all around Sedbergh is full of interest and all sections will find ample scope for activities. In addition to the Silurian rocks of the Howgill Fells, Barugh Fell, just to the east of the town, is carboniferous with interesting gills along the western side, i.e. Dovecote and Hebblethwaite gills where the Great Scar limestone is exposed.

ORNITHOLOGY.—W. Richmond, Sec. Sedbergh School Ornithologists: Nearby tarns and meres hold good numbers of water-fowl in the winter, but these numbers are somewhat reduced in the summer months. Black-headed Gulls breed in small colonies at Sunbiggin (V.C. 69) and Whernside.

The rivers provide habitats for Dippers, Common Sandpipers, Oystercatchers and Wagtails; Ring-Ousels breed up some of the smaller gills and in craggy areas on the fells. Kestrels and Buzzards breed on some cliff faces round Sedbergh, and Peregrines have been known to breed in the district.

The hedgerows hold the usual passerines in Turdidae, finches, tits and similar small birds. In winter there are three comparatively large roosts holding mainly Turdidae and Fringilidae, and it is likely they may hold birds in the summer, but not in such large numbers. Tree-Creepers roost in *Sequoia* in a nearby parkland and evidence shows that they are not lacking in numbers.

Woodpeckers and Owls breed in woods in the area, and an albino Tawny Owl was seen last year. Golden Plover breed on the fell top and less common waders have been seen on passage on the higher hills.

It can be seen that the avifauna population of the Sedbergh area is fairly large, and of wide variety, but no exceptional rarities have been recorded.

BOTANY.—A member of Sedbergh School contributes the following note: 'The flora of the Sedbergh district is rich and varied, the rugged country providing many types of drainage and soil-lodgement as well as several types of soil. Perhaps most interesting are some of the bogs, where Bog Asphodel, Grass of Parnassus, Lesser Butterfly Orchid, Mealy Primrose, Butterwort, Marsh Cinquefoil, Cranberry and Bogbean are fairly frequent.

The Orchid family is particularly strong in the area, the Scented Orchid abounds and the rare Small White Orchid (*Leucorchis albida*) exists in small numbers.

Other rarities are the Dusky Cranesbill and the Hawkweed *Hieracium aurantiacum*. Both are regarded as escapes, but have become completely naturalised.'

The flora of Cautley Spout is too well-known to need any introduction. Here *Alchemilla alpina* L. (Alpine Lady's-Mantle) is plentiful, *Epilobium alsinifolium* Vill. (Chickweed Willow-herb) *Ramischia secunda* (L.) Garcke (One sided Wintergreen), *Saxifraga stellaris* L. (Starry Saxifrage) and *Hymenophyllum wilsonii* Hook (Filmy Fern) are other plants likely to be seen. By the Rawthey. *Circaea alpina* L. (Alpine Enchanters Nightshade) and *Epilobium nerterioides* Cunn. have been recorded, as has *Melica nutans* L. (Nodding Melick).

The master cards for the two squares to be visited show there is still a good deal of work for botanists. The area is known as a rich habitat for Mosses, Hepatics and Lichens. The rocks by the Rawthey are not so well known as the Howgill and Lune valley or the Cautley areas.

Tea will be at headquarters on Sunday, at 5 p.m., followed by the meeting for presentation of reports and other business.

The Flowering Plant Section will meet on Sunday, July 30th, at Buckden, Wharfedale, V.C. 64, at 11 a.m.—no arrangements are made for meals: members bring picnic lunch and tea. Leader: Dr. W. A. Sledge.

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THE UNIVERSITY, LEEDS,

with the assistance as referees in special departments of

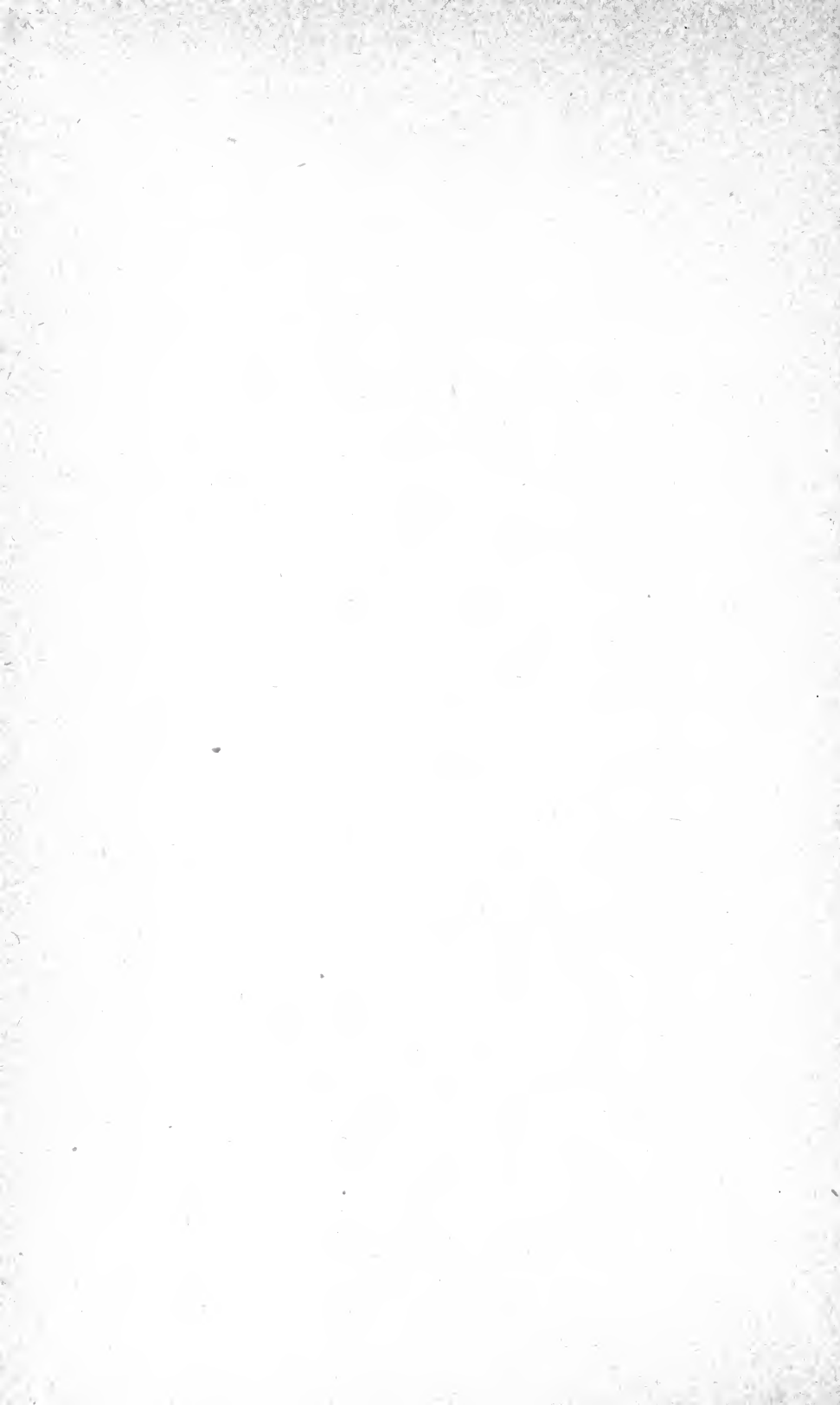
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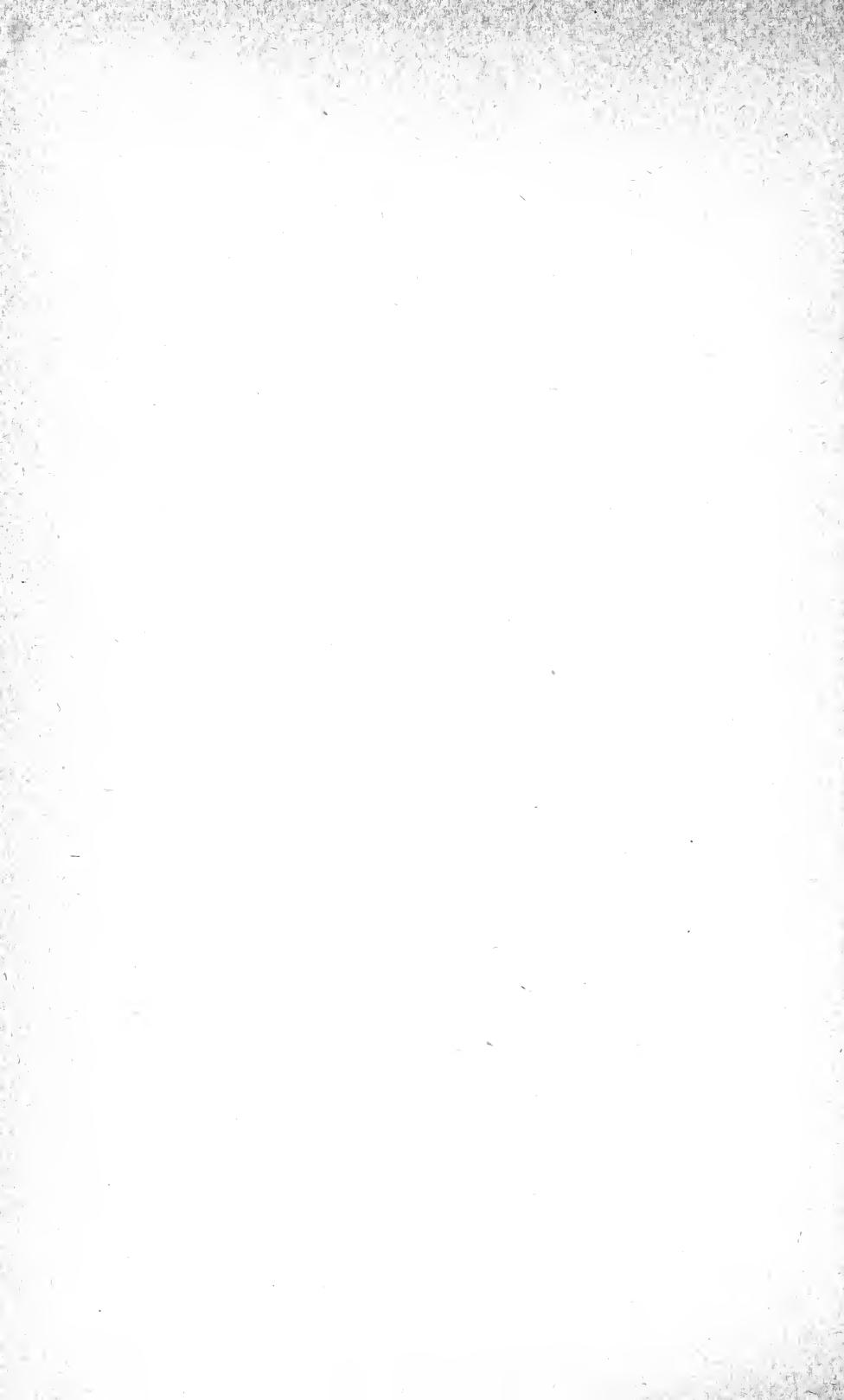
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THE NATURALIST

FOR 1962

PROGRESS IN THE CONSERVATION OF NATURE

THE RT. HON. LORD HURCOMB, G.C.B., K.B.E.

Presidential Address to the Yorkshire Naturalists' Union, Wakefield, December 2nd, 1961.

I OWE you an apology for not being a Yorkshireman and in acknowledging the exceptional privilege of being elected your President for this Centenary Year, I assure you that I value the honour immensely. Without taking it as personal to myself, I interpret your invitation to me to accept this office, in succession to such a long line of distinguished Yorkshiremen, as evidence of the desire of this historic Union to mark its solidarity with those nation-wide organisations over which I happen to preside and which are all directly concerned in the movement for the better conservation of nature that is now taking shape.

If I am right in my interpretation, may I convey to the Union, on behalf of four such organisations—the Society for the Promotion of Nature Reserves, the Royal Society for the Protection of Birds, the Council for Nature and the Nature Conservancy—their congratulations upon the completion of a century of remarkable achievement and their good wishes for the future? The times are critical for conservation, and the strength of your Union makes its support a real encouragement to all who have that cause at heart.

The services rendered to science during the past century by Yorkshire naturalists have been given to the study of natural history in all those branches of which 'locality is one of the essential elements', an apt phrase used in W. Denison Roebuck's presidential address for 1903. *The Naturalist*, in itself a solid monument to the Union, and the Union's own publications together provide a corpus of information unrivalled in any other county, and scientific papers of a range and quality which no other group of naturalists or field workers could claim to equal. Among those who have contributed to these records and this flow of scientific papers, famous names recur throughout the century, and from time to time some of the leading figures have cast a backward look and surveyed the activities of their predecessors. Articles in the current special number of *The Naturalist* recapitulate the work done, and their interest is enhanced by recollections of the personalities of the past by those who knew them. Like the earlier reviews, they throw an agreeable sidelight on changing social conditions and the habits of earlier generations of field naturalists. They reveal, as permeating the Union, what Canon Raven in his *Life of John Ray* calls 'The authentic love of living things . . . of the countryside and its denizens, which marks the real naturalist . . . eager to see them alive and in their natural setting', and they note with satisfaction the rapidity with which any troublesome sense of class distinction disappears in the field, where differences in degrees of formal education, differences between the manual worker and the professional man, between young and old, cease to be barriers to mutual understanding. A common pursuit of field studies is still a wholesome and practicable way of breaking down such barriers.

These contributions to the past history of the Union make a fascinating record, and I feel that the best tribute which we can pay today to the work and memory of the distinguished members of the Union during the past hundred years is to look at the problems which we have to face, and which we have to solve, if the pursuits in which they delighted are to continue and if the wild life which they loved to study is to be open to our successors in anything like the variety and abundance which we ourselves inherited.

THE CASE FOR CONSERVATION

Wild life and its essential natural environments are now confronted, often in unexpected places, with threats more numerous, more pervasive, more insidious, and biologically more devastating in their impact than anything which the naturalist of the nineteenth century, or even the last generation, had to worry about. The range of many interesting species of the flora and fauna contracted in past centuries, including the nineteenth, but, in the earlier surveys of the Union's activities, few notes of general alarm are to be detected. In his presidential address for 1915,

Riley Fortune took as his subject 'The Protection of Wild Life in Yorkshire', and even forty-five years ago he mentions, among menaces to wild life, the use of weed killers, and the destruction of sea birds and ducks by oil, then said to originate from German submarines. But the address recognises only incidentally that the eventual direction for protectionist effort would be found in the preservation of habitats. In this respect, as a result of a keener realisation of the various pressures upon hitherto undisturbed country and still more as a result of the growth of ecological knowledge, there has been a notable shift of emphasis from the legal or other protection of particular species to the more fundamental conception of the need for the conservation of the whole environment in which those species are to be found. It is the habitat which must be preserved. Behind this change from the idea of protection or static preservation to that of dynamic conservation there lies a difference of policy and a somewhat different appeal. The difference was appreciated earlier in the United States. Our own Society for the Promotion of Nature Reserves perhaps chose a significant title when it was founded in 1912; but only in 1949, when we were ready to create a national organ for the establishment and maintenance of nature reserves in Great Britain, did we make the complete terminological change and designate that organ 'The Nature Conservancy'. More recently, the International Union for the Protection of Nature decided to be called 'The International Union for the Conservation of Nature and Natural Resources'. This was done not merely because of the change in the ecological approach but because the word 'protection' was felt to imply that the object of 'protectionists' was to protect nature against, and not in, the interests of man. The implication was especially an obstacle to the presentation of the idea of preservation of wild life, as an object of policy and administration, to primitive peoples, who regarded 'protection' as something imposed by the white man, including the big game hunter, in his own interest. The conception of conservation is broader-based and carries with it scientific, cultural and economic connotations which are more readily accepted.

The issue has arisen in its most acute and spectacular form in connection with the large African mammals. This unique fauna is a world possession which Africans must be regarded as holding in trust and which in their own life and in their own background takes the place occupied in other lands by works of art or monuments. Even if Africans were deaf to this wider argument—and the Prime Minister of Tanganyika publicly accepted its validity at a meeting at Arusha last September—it can be maintained, on ecological grounds, that the right use of large tracts of land in central Africa may well be for the maintenance of these wild animals, under proper management, in the best interests of the native population itself. In addition to their attraction to tourists, as Sir Julian Huxley has put it, the natural fauna may contribute more protein, profit and prestige than domesticated animals, and they do not impoverish or denude the soil. One can adopt these arguments as reinforcing, without supplanting, the deeper arguments which underlie the view that the preservation of the world's wild life is a fundamental interest of all civilised men.

In Mr. Nyerere's words: 'The survival of our wild life is a matter of grave concern to all of us in Africa. These wild creatures and the wild places they inhabit are not only a source of wonder and inspiration, but are an integral part of our natural resources and of our future livelihood and well being.' That is a remarkable and encouraging statement, coming as it does from an African minister at a time when power is passing into African hands.

The conviction that the preservation of the wild life of the world is an essential human interest, a question of nature for man and not nature against man, is gathering strength. Reservation for natural life may often no doubt be defended as the right use of particular lands from an economic point of view, taking into account both short-term yields of protein from managed mammals and gains from tourist traffic, and long-term benefits. But it will not always be possible to rest the case for conservation on a solid economic argument. What then do we say when we are challenged to defend it? It is unnecessary, in an audience like this, to argue at length all the other grounds on which the policy should be pursued. You may base it on the scientific importance of keeping alive all creatures from which new knowledge may be extracted. You may say that no man, or generation of men, can have a moral right to extinguish surviving forms which are the result of the whole period of evolution on this earth; you may say that the continued existence of natural life, which has been the environment and background of human existence hitherto, must be maintained as a source of inspiration for man's art and literature, or you may say that, without

this means of recreation and refreshment, an over-urbanised population will lose its health and proper mental balance. The cumulative argument for conservation is compelling, and it applies to all continents and to plants as well as animals.

Shortly after the African meeting, leading conservationists in many countries joined in a declaration that a state of emergency had arisen in respect to the continued existence of wild life. A little later, at a meeting in London in September last, a Charter was also promulgated calling for a universal effort to protect wild life, to prevent its further extermination and to ensure that room shall be left for what remains. Here in Great Britain changes are less spectacular than in Africa. Our landscape has been for many centuries modelled to the needs of man, by processes which have been gradual, sporadic and admitting great variety of treatment, still compatible with an abundant native vegetation and fauna. But now changes come thick and fast, and often with far more devastating effects upon particular sites or with more far-reaching results, such as those which may be entailed by modern agricultural practices, including drainage of ponds and ditches, the uprooting of hedges and the almost indiscriminate use of poisonous chemicals. Cumulatively, these developments and changes, coupled with the growth and the increasing mobility of our population—even if they do not amount to a state of actual crisis—have created a situation serious enough to compel naturalists to re-examine the means by which they can better cope with it. With the next upsurge in population, the position in parts of England may easily develop into one of emergency.

THE APPROACH TO CONSERVATION

Later, I will consider the machinery for meeting the situation which is now at our disposal. First, what should be our general approach?

Some changes and projects naturalists cannot reasonably resist; against others they are justified in making a stand. Some compromises and sacrifices will have to be accepted; naturalists would prejudice their chances of success in good cases if they appeared to object automatically to every development essential for the continued life of the human community. But it would not be difficult to think of areas where the loss to nature and to science would be irretrievable if industrial exploitation or developments, which could be avoided or sited elsewhere, were allowed. Upper Teesdale is one of them. If we choose our priorities carefully, we can stand firm in the contention that the preservation of wild life is a human interest, entitled to a high place among the permanent requirements of every civilised community in the pattern of its land-use, and refuse to acquiesce in the common attitude that this is just something to be thought about, if at all, only after every immediate, short-term, material interest of some group of men has been amply satisfied on the cheapest possible terms.

And we are entitled to insist that the best ecological knowledge should be brought to bear before practices or projects likely to damage wild life are approved. With sufficient forethought, damage can in some cases, perhaps in many, be avoided or at least mitigated. To take one example, should not the introduction of poisonous chemicals in agriculture be subjected to greater supervision before use? A second illustration of this general point would be the need for a more comprehensive review of the siting of large dams, which, like interferences with the regime of rivers, may have far-reaching consequences.

I should not like it to be supposed, from anything I have said, that the old-fashioned views of protection are obsolete. On the contrary, over wide areas of the globe cruel and illegal practices are rife. Legislation, if it exists, is rudimentary or not enforced. The poaching of the large African animals has been vividly brought home to everyone by television programmes; the slaughter of small birds on migration by shooting and trapping in France, Belgium, Italy and Greece is immense; the unique fauna of the Galapagos islands is under threat of extinction through predators introduced by man and interference by tourists, and irreplaceable tropical and other forests are being destroyed. In our own country, it is of course true that many of the earlier naturalists were collectors, but they culled sparingly from a flora and fauna far richer than that of today, numerically and in range of distribution. Riley Fortune emphasised the damage done by collectors, and we still have collectors of birds' eggs. These misguided persons concentrate their attention on the rarer species, including those which reach the edge of their range by coming here at all. They are too selfish or too ignorant to heed the warning, endorsed by Darwin, that rarity may be the precursor to extinction. Legal prohibition, and, what is more

difficult, enforcement of the law against these practices are still very necessary. We have, I hope, put a stop to any widespread trade in eggs by dealers, but the private egg collector is still at work, while the illegal destruction of birds of prey continues to be a reproach to many game-keepers and to the employers who fail to control them. I do not know how far this destruction is practised on the Yorkshire moors; in the country at large it is shameful. I wonder also whether our native butterflies have suffered unreasonably from the attentions of collectors as well as from other causes. And conservationists have said that the greatest enemies of rare plants are botanists and gardeners.

I have digressed, and I return to the conservation of habitats, which must play the main part in the protection of species. It has become equally clear that conservation means management. The idea that it was enough to set aside an area as a harbourage for wild life and then to leave it to itself proved to be fallacious. The Nature Conservancy, therefore, for its own Reserves, draws up a scientific plan of management, defining the objects for which the Reserve is established, the researches to be carried on, and the methods of maintenance necessary to enable those objects to be attained. This is, of course, in addition to rules about access, permits to collectors, points of estate management and matters of that sort.

Each plan brings together what is known as to the history of the Reserve and what it contains. The first plans are necessarily provisional; they will be varied as knowledge and experience accumulate, and such plans have now been approved for 25 out of the 46 Reserves in England.

A similar system should be applied to local and Trust Reserves, and Askham Bog provides a conspicuous example of a plan agreed between the County Trust and the Conservancy for a Reserve of which we have recognised the status by a special designation.

The modern policy of conserving habitats and maintaining them under scientific management is, of course, vastly more effective than the old methods, but it is also more expensive to carry out, both in money and in scientific man-power. Nevertheless, consequent upon, if not side by side with, the recognition of the need for conservation, substantial progress has been made in the process itself.

THE NATURE CONSERVANCY

The Royal Charter requires the Nature Conservancy to establish and maintain Nature Reserves. Long before 1949, isolated steps were taken by voluntary bodies to establish such Reserves; for example, the Society for the Promotion of Nature Reserves, through the munificence of Charles Rothschild, was enabled to secure and set aside a remnant of fen at Woodwalton, and in 1946-47 the Royal Society for the Protection of Birds secured the lease of the Minsmere Marsh in Suffolk, which ranks as one of the principal bird Reserves in north-west Europe. There followed in the last decade a number of local Nature Reserves, of which Farndale is the largest and Fairburn Ings, a good example, both in this county.

No doubt if the Conservancy had existed fifty years ago it would have been able to secure, at little cost, many areas of great importance to naturalists which have since become impossible of acquisition, or no longer worthwhile. Even so, when arrangements are concluded for protecting the botanically vital spots in Upper Teesdale, representative samples of all the principal natural habitats will have been safeguarded, for the time being. I make that qualification because in many cases all that we have been able to do is to enter into agreements with the landowners for the protection of the scientific interest attaching to the land in question, usually for not less than twenty-five years. We hope that in most cases the agreements will continue.

In Scotland it has been much easier than in England to come to such arrangements, and actually to acquire large areas, since the pressure of population is far less intense north of the border and the normal use of the land is not incompatible with the existence of the flora and fauna which it is desired to conserve. In England, naturalists are perhaps entitled to claim that the Conservancy has been modest in its aims, though its achievements have been very real. In Great Britain, the total extent of the national reserves, now over ninety in number, is 179,000 acres, about 80 per cent. of it in Scotland. Over 100,000 acres are covered by agreements, 14,000 acres are leased and 64,000 acres only are owned. Taking England alone, we have safeguarded by one method or another, during the twelve years of our existence, a total of 29,000 acres in forty-six separate Reserves: some 11,000 acres

are protected by agreements and 4,700 are held under lease; only about 13,000 acres are actually owned by the Conservancy in England, and of this 10,000 acres are in a single Reserve at Moor House in Westmorland, which consists of open moor and fell.

The cost of our purchases in England has been about £58,000 and the price works out at between £4 and £5 an acre, including some standing timber. This figure demonstrates that we have not sought land of much value for other purposes.

SITES OF SPECIAL SCIENTIFIC INTEREST

In addition, the Nature Conservancy has notified to local planning authorities in the whole of Great Britain about 2,000 Sites of Special Scientific Interest (of which two-fifths are primarily geological) under Section 23 of the 1949 Act. This procedure has a value which I would not under-rate. It gives the Conservancy no powers of control, but entitles us to be consulted before certain changes in use are authorised, and this enables the planning procedure to be applied. No consultation is, however, required, if the change is merely in agricultural use or for purposes of forestry. No one, of course, would suggest that all changes in the agricultural use of land should be brought under the normal elaborate planning machinery, but where under a statutory procedure certain sites are declared to be of special scientific interest, any protection afforded is obviously much diminished if farmers and foresters can make significant alterations in time-honoured use without consultation. A solution of this urgent problem has yet to be worked out, in agreement with the agricultural authorities. Some narrower criterion than mere change of use or crop would be required to meet their views and the sites might have to be further categorised, though such a process would be difficult and laborious. Certainly changes to which reasonable objection is taken, on the score of detriment to the flora and fauna, ought not to be stimulated by grants of public money through ploughing subsidies.

Of the total notified sites there are about 1,440 in England. Ninety-two lie in Yorkshire, divided among the Ridings as follows:

North Riding	.	.	.	.	28
East	„	.	.	.	22
West	„	.	.	.	42
					—
					92
					—

A geological or physiographical interest is dominant in more than half of them, and this is natural in a county which claims so many of the early fathers of geology.

It may be disappointing to you that the declared National Nature Reserves in Yorkshire are limited at present to a single one (Ling Gill). Prolonged and tiresome negotiations are still being patiently pursued for another, and fortunately we have made much better progress in negotiating a Nature Reserve Agreement, covering about 6,500 acres, in Upper Teasdale in Yorkshire. Under this Agreement the owner will do his best to safeguard the flora and other features of special interest against destruction, while the Conservancy will do all they can to see that no abuse of access or interference with this private property will arise. But recognition of the county's importance to naturalists is to be found in its high number of notified sites. In the address to which I have referred, W. D. Roebuck wrote with justifiable pride of the remarkable variety of habitat which the county includes, with all the advantages which it consequently offered to local naturalists.

The list of notified sites illustrates this extraordinary wealth. It includes the Carlow stone and a number of geological monuments occupying no more than an acre. It includes great tracts of Upper Teesdale and of Ingleborough, and in between those extremes a varying selection of sites of all sizes and shapes, each exhibiting some feature of exceptional geological, biological, or physiographical importance. The limestone uplands of Malham and Gordale, including the Tarn and its adjacent peat bog, cover more than 3,000 acres, and are as outstanding in scientific interest as they are in natural beauty.

Speaking for a moment as President of the Field Studies Council, I am glad that our warden, Mr. Paul Holmes, should have served as your President. There could be no better warden and no better naturalist. The Centre is anxious to assist members of the Union in every possible way and welcomes their investigations. May I also express to you our intense regret at the loss of W. D. Hincks, who visited Malham in five successive years and has ensured that its insects will be better known

than those of almost any area? It is with a deep sense of sadness that we pay tribute to his services to this Field Centre, to the Union, to entomology, and to science.

THE RÔLE OF VOLUNTARY ORGANISATIONS

I have referred to the action taken in this country to protect habitats in the last ten or twelve years at Government level, and I pass to consider for a few minutes changes in the voluntary organisation of naturalists themselves which have recently been made with a view to enabling us to take advantage of modern conceptions of conservation and to cope with the new threats which menace our flora and fauna.

A flood of light is thrown upon the growth of the natural history movement in England by the origin and development of the Yorkshire Naturalists' Union itself. Here the members of many isolated and specialist groups in particular towns soon recognised the advantages to be secured by some new form of association or 'consolidation' in the West Riding and then later by an extension of that principle to the whole county, with a change of name. Yorkshire again was the second county to form a Naturalists' Trust. National bodies of high standing and devoted to particular studies date back even to the eighteenth century and the earlier decades of the nineteenth century. Kindred bodies covering mammals and many other groups duly came into being later. Yet, until three years ago, there was no organisation which was both nation wide in its scope and catholic in the range of the natural history studies it fostered and which could therefore represent the interests of naturalists as a whole or make united representations on their behalf.

THE COUNCIL FOR NATURE

Most of us sympathise with the statesman who said that a new committee ought never to be established unless two existing committees were at the same time abolished, and it is fair to ask why it was necessary to bring a new organisation, like the Council for Nature, into being. I have indicated the short answer. In spite of the existence of many national societies and hundreds of local ones, none covered the whole field of natural history, even at the consultative level, or provided its constituent societies with an intelligence service about what was happening in natural history, or could give them advice on points of procedure or taxation and similar matters requiring professional or expert knowledge. More important, in these days it is often necessary to make representations to Ministers, Departments, the Press, or Parliament, when areas of special natural interest are threatened with destruction or damaging change, or when issues like the use of toxic chemicals in agriculture arise and are restricted to no one locality or form of life. On such questions a considered case should be submitted and supported by acknowledged scientific authorities, from a national angle. Then there are many constructive and new services to be rendered by the Council to its constituent societies of which I will mention the successful film unit, the Centre opened at Brantwood, and the Conservation Corps of young people willing to do physical work on Nature Reserves. It was to fill these gaps that the Council for Nature was formed in 1958 under the patronage of H.R.H. Prince Philip.

Let me add that the existence of the Nature Conservancy is regarded, by those best able to judge, as emphatically not a reason against establishing a voluntary Council for Nature. An official body, part of the machinery of Government, and drawing its financial resources from votes of Parliament can do much which a voluntary body cannot attempt, but there is also much that it cannot do. It cannot openly prod or criticise the Government to which it is responsible; it needs the support, the stimulus and the criticism, which only an independent body closely in touch with local views and circumstances can supply.

Taking this view, I am glad to tell you that already almost all the local natural history societies which have life in them have joined the Council for Nature, 230 of them in all, including the Trusts, together with seventy national societies, museums or University departments. In total, the Council for Nature now represents societies themselves embracing a membership of some 80,000 persons, a body of opinion which impresses those in authority as something to be reckoned with.

COUNTY NATURALISTS' TRUSTS

Another development in the voluntary organisation of naturalists has quickened its pace. There has been recently a rapid expansion in the number of County

Naturalists' Trusts. Such Trusts now cover a large part of England and some of Wales. At the moment, fifteen of them have already been incorporated, five are in process of incorporation and seven are in advanced stages of formation, making twenty-seven in all. Here again it is fair to ask why it has been necessary to create additional bodies. Just as the Council for Nature has not supplanted local societies or poached their membership, so there is no conflict of interest but a real difference in function between the local societies and a County Trust, covering all branches of natural history, however great the overlap of membership may be. The precise form which local organisation should take, must be settled by those who know best the local circumstances and opportunities. But can there be any doubt of the value of a County Trust when you have already such proof in Yorkshire as the preservation of Askham Bog and the Spurn promontory, and now by agreement with the Forestry Commission the safeguarding of part of Grass Wood in Wharfedale?

An incorporated body with power to hold land is in a strong position to defend a local territory and the wild life which the area contains if it owns the properties concerned or has some footing in them by reason of agreements as to their use. It may also attract benefactions from persons anxious that areas which they have long known as places of delight to themselves should remain unspoiled for the enjoyment of those who come after them, and at least one of the County Trusts has already been fortunate in being legally entitled to accept an important benefaction of this kind. For these and similar reasons I have long advocated the creation of such County Trusts, with the full approval of the Society for the Promotion of Nature Reserves. The Society was glad to assist the Yorkshire Trust to acquire Spurn, and it has earmarked an initial sum of £5,000 to serve as a revolving fund from which loans can be made, with or without interest, to meet other urgent demands for acquisitions beyond the immediate resources of a particular Trust.

FINANCE

Finance is a difficult topic, but we can all agree that the nature movement as a whole needs much more substantial financial support than it has hitherto received. With more financial backing, more could be achieved and many opportunities seized for conservation, both internationally and in every continent and every country. So strongly has this been felt that in the last few months yet another new move has been made on a world-wide scale. In connection with the World Wild Life Charter conservationists in many countries decided this year to start a World Wild Life Fund, to be administered by a body of Trustees, scientists of great reputation and others expert in the special problems of conservation, of which Prince Bernhard of the Netherlands has agreed to be patron. It aims at raising a substantial sum annually, from which all countries can be helped, by grants of money, to save threatened areas of ecological importance, and to do more, for example, to save not only the African fauna but other hard-pressed creatures, including the rarer species of bird in all parts of the world, and vegetation of exceptional interest, for example the fast diminishing areas of tropical forest, and a host of precious plants. Unless major habitats can be saved, their inhabitants are doomed.

We have been quick off the mark by starting the fund in this country, thanks largely to the resourceful energy of Mr. E. M. Nicholson, but the intention is to launch appeals in all the leading countries in all continents before we get far into 1962. In each country there will be a body of Trustees for the national appeal, our own headed by H.R.H. Prince Philip, to administer the moneys raised. It is contemplated that a substantial proportion of the amount raised nationally should be retained for internal use by the national trustees, another substantial proportion would be paid over to the World Wild Life Fund, and the balance held for allocation as may be agreed between the two bodies of trustees concerned. Every country would of course be free to apply to the World Fund for assistance. We hope that this new machinery for securing finance less miserably inadequate to that which any protection, preservation or conservation of nature requires in present circumstances, may be successful, here and elsewhere. If so, something will have been done to save wild life throughout the world. Grants have indeed already been announced for the provision of protection for the rhinoceros, black and white, for the purchase of an important area of the Marismas at the mouth of the Guadalquivir, for the assistance of an expedition to Tristan de Cunha and towards restoring the Hawaiian goose to one of the islands on which it is now extinct.

At home, on the side of organisation, the creation of the Nature Conservancy,

now firmly in the saddle, the establishment of the Council for Nature, and the growth of Naturalists' Trusts alongside and in support of local and specialist societies—all these recent signs of life and advances in method of attack have equipped us, given financial support, to tackle the serious problems confronting naturalists with better hope of reasonable solutions. We need no longer everywhere seem to be fighting a losing battle.

ALLIES OF CONSERVATION

Nor are we without allies. All lovers of the countryside and those concerned for its amenities will be on our side, and often we shall be on theirs, though the scientific and natural history arguments are those on which naturalists must rest their own case; we cannot, as naturalists, join in every battle for amenity or against any change in the landscape, where the well-being of wild life is not involved.

Normally also we shall have the support of sportsmen, though some of them, and particularly perhaps shooting syndicates, may require watching in the matter of destruction of birds of prey. With the wildfowling good relations have been established. Their responsible associations are anxious to see the law properly enforced, and they give enlightened support to the chain of Wild Fowl Refuges which it is hoped to establish in Western Europe and in which the Humber Refuge already constitutes an important link.

As a fisherman, I feel that we should have the active co-operation of all brothers of the angle and their associations. In addition to their interest in the prevention of pollution, how much poorer must be their sport and how much duller their days by the water-side without an abundant aquatic life of plant and insect and all the other creatures who like themselves are attracted by streams and lakes.

THE RÔLE OF LOCAL SOCIETIES

May I now refer briefly to ways in which local Naturalists' Societies and Trusts can co-operate both with the Council for Nature and with the Nature Conservancy, and before going further acknowledge gratefully the benefit which the officers of the Conservancy have derived from the close contacts established with the Union and its officers?

I will start by endorsing what Professor Valentine said last year, that individual naturalists can influence and help to control national policy on nature conservation if they put their knowledge at the disposal of those who can use it effectively, and if they do all they can to create an atmosphere of public opinion favourable to the cause and ready to demand intelligent action when conflicts occur in the competitive scramble for land. The point of view of the naturalist may fail to carry weight unless it has public backing.

Next, there are many direct services which local naturalists can most effectively render in connection with the special sites. Careful as was the investigation which led to the original selection and subsequent revisions of the county lists, there are no doubt still some which have been overlooked or through changing circumstances have assumed new importance or perhaps lost the importance they once had. No one is so well qualified to draw attention to such gaps and changes as yourselves.

In most of these sites, complete or even reasonably adequate surveys of the fauna and flora still remain to be made. Great scope is thus left for local amateur as well as professional naturalists, and especially for those concerned with what have been called the 'neglected orders'.

Then we find it particularly valuable to have in each county organisations of naturalists who appreciate our aims and are qualified and able to keep a watch over what is happening day by day in the hundreds of special sites which have been notified to the planning authorities, thus releasing the Conservancy's own staff for more specialised scientific work and study of conservation problems. The extent and importance of such sites in Yorkshire make this a point to emphasise.

ACCESS TO RESERVES AND SPECIAL SITES

It is not realised how restricted the Conservancy has been by considerations of finance and scientific manpower. The financial resources available for acquisition are still extremely meagre. I hope you will agree that in spite of these difficulties very substantial progress has been made. Nevertheless, hitherto it has not been and is not likely to be practicable to select at most more than a hundred and fifty areas of high scientific importance for establishment as National Nature Reserves. These

Reserves are often described as open-air laboratories, or living museums, and usually they are both of these things. But they are also more than that and provide living room for a wide range of interesting plant and animal forms in association. This is all to the good since we are none of us interested only in rarities or exceptional associations; yet it must be realised that, if the abundance and variety of the whole range of our wild life is to be adequately safeguarded, and in some areas to exist at all, local Reserves and the special sites are vital.

I have referred to the need for stronger statutory protection of these sites. There is another problem, which arises also in some of our Reserves, the problem of reconciling the interests of naturalists, of the owners and of those who wish to resort to yet unspoiled and undisturbed country for purposes of recreation. The National Trust and the National Parks Commission in the areas which they control are bound to have primary regard to this more general reason for preserving the countryside, though that does not prevent both of them from doing much to afford protection to wild life. In foreign terminology some of our own large Nature Reserves, for instance the Cairngorms (about 62 square miles), would indeed be called National Parks. In many of our Reserves, and particularly the smaller ones, we are bound to put some restraint upon disturbance in the interests of the fauna or flora they are designed to conserve and of the scientific researches to which they are in part assigned. But subject to these necessary restrictions, which are kept at a minimum, the Conservancy's policy is to permit as much multiple use as possible—grazing, silviculture, legitimate sporting activities—and to facilitate access by the public, including mountaineers, with whose clubs special arrangements have been made. A few of our warden naturalists are able not only to assist visiting naturalists, but to do something to open the eyes of the general public to the real interest of a Reserve. As our resources permit us to appoint more qualified wardens, I hope that it may prove practicable to do more in this way. Where it has been possible, as in the Cwm Idwal Reserve in Snowdonia, the guidance of Mr. Evan Roberts, the warden, has been widely appreciated. It is important, however, to remember that notification of the special sites gives no right of access, and while owners have been helpful in facilitating visits by responsible naturalists for scientific purposes, the pressure of population is in many cases severe enough to threaten the wild life and to be a nuisance to the owner or occupier as a result of careless or ignorant behaviour on the part of a few. There is damage by trampling in terneries and other disturbance of breeding birds; there is a grave risk of fires, especially on common lands, at weekends and holiday times; there is unreasonable plucking of wild flowers and there is interference of various kinds by thoughtless town-bred people, justly resented by the farming community. I am told that, at a fine summer weekend, Malham village, with a normal population of about one hundred, receives between twenty and thirty coaches carrying a thousand children as only one element in an invading horde, and this into an area most of which is an S.S.S.I. If these children, or some of them, could be helped to appreciate better what they see, either before they come, or even when they are on the ground, some of them at least would enjoy their visit all the more and be more careful not to do damage in the course of it. Schemes for voluntary or honorary warden naturalists may be helpful.

I may add that the Nature Conservancy has always been advised not to publish for general information the full lists of S.S.S.I.'s, though they are available confidentially to responsible organisations. It has been thought necessary to take this line partly in order not to draw attention to sites containing great rarities, but mainly to meet the wishes of the owners of the land who fear that the public might get a wrong idea as to its rights. I am sure that bodies like your own, by their example and by advice or admonition to others, as opportunity offers, are doing everything possible to check inconsiderate behaviour. Enthusiastic geologists, adventurous speleologists and parties of wandering naturalists have all on occasion given rise to complaint.

My concluding point is that before long the possibility of more fruitful use of common lands will be brought under public review. The interests of wild life will need very close watching, common by common, by those intimately acquainted with their value to naturalists. Here again the county Trusts and a Union like your own can play a valuable and active part in suggesting the right solution of the many problems which will arise.

Finally, I would remind you that, in dealing with some of the threats which menace our wild life, action from the centre will usually depend for its effectiveness

upon information obtained locally. A conspicuous example is the use of toxic chemicals in agriculture. The influence which it has been possible to exert at the centre in this matter owes a great deal to the careful observation of actual occurrences by ornithologists on the spot. General allegations of loss or damage carry little weight with scientists, but when well-substantiated evidence of the numbers and variety of mammals and birds suffering from this cause was accumulated and could not be challenged, the Ministry and the scientists advising them were driven to recognise the facts. The effects of water pollution on wild life and damage to birds and aquatic life by oil are two other matters in which actual evidence of adverse results is required to back up general statements.

I hope that I have said enough to satisfy you that real progress has been made in the conservation of nature. A conception of conservation which is soundly based on ecological knowledge now prevails among ecologists and extends to all those interested in the effective preservation of their flora and fauna. Scientific research has begun to reveal the principles on which wild life and its habitats can best be managed and most successfully maintained. The public conscience in many countries, including our own, and notably in Africa, has been stirred to the point of active concern for the conservation of wild life before the situation becomes more critical. It is late to take action, but not too late to save even what may otherwise become the 'fossils of tomorrow'. Wide public sympathy for the cause has been roused and the launching of the World Wild Life Fund has already made it possible to assist an important range of emergency projects.

In the international field, the International Union for the Conservation of Nature and the International Council for the Protection of Birds both need to be assisted to meet the costs of their organisations, just as the financial position of many societies at home must be strengthened so that they may be able to deal with emergencies by acquiring areas of first importance beyond the resources of the Nature Conservancy.

On the side of organisation, we now have at home, parallel to the Conservancy, the new voluntary Council for Nature. (I have described the scope of its function.) The older Society for the Promotion of Nature Reserves has responded to changing conditions by assuming wider responsibility, while behind them both a growing number of County Naturalists' Trusts and vigorous local societies, such as those embraced by your Union, are becoming more and more active in conservation.

The areas most worthy of preservation have been put on the map and, in Great Britain as a whole, about two thousand of them have been notified to the Planning Authorities. In addition about a hundred National Nature Reserves of outstanding importance have been established. In the care of these sites, in suggesting right solutions of local problems, in observation of the results of the use of toxic chemicals and of pollution of our rivers, and in tracing the causes which underlie any decline in the abundance and variety of natural life, local naturalists have ample and important fields of endeavour open to them. Naturalists all over the country have the utmost confidence that Yorkshire will continue, as it always has done, to play a leading part in these and many other directions, and I am sure that they all join me in wishing your Union another century of equally fruitful and distinguished achievement.

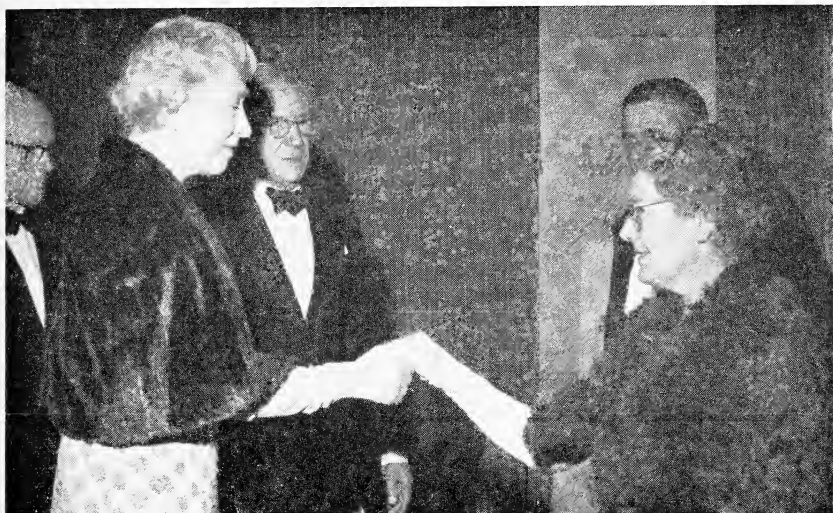
The Conservation of Wild Life and Natural Habitats in Central and East Africa, by **Julian Huxley**. Pp. 112 with map and 22 photographs. Unesco publication; H.M. Stationery Office, 1961. 6/- net.

This worthy booklet, being the report on a mission accomplished for Unesco July to September, 1960, calls our attention to the wealth and significance of the African fauna not only for the Africans but for every interested person in every land. It is a rich heritage for us all but one which is at present being exploited for monetary gains so that if we wish to pass it on to our successors we must take steps to protect it actively now; otherwise it will be too late. Many helpful suggestions and appeals are made and it behoves every one of us to read this book and do what little we can to ensure that the present fauna of Africa shall survive.

E.H.

On Friday, December 1st, 1961, 200 members, affiliated members and friends of the Yorkshire Naturalists' Union celebrated the Union's centenary with a dinner held at Leeds University in the presence of Her Royal Highness the Princess Royal, Patron of the Union, and a number of distinguished guests representing the various branches of natural history.

The guests of honour were H.R.H. The Princess Royal and Mrs. Cuthbert (Lady-in-Waiting); The Lord Mayor and Lady Mayoress of Leeds; Lady Morris; the Pro-Vice-Chancellor of Leeds University, Professor R. H. Evans and Mrs. Evans (in the absence of the Vice-Chancellor, Sir Charles Morris, for health reasons); Mr. E. M. Nicholson, C.B., Director-General, the Nature Conservancy; Dr. G. Taylor, F.R.S.E., F.L.S., Director, Royal Botanic Gardens, Kew; Dr. John Ramsbottom, O.B.E., M.A., F.L.S., formerly Keeper of Botany, British Museum (Natural History), South Kensington, and Miss M. Ramsbottom; Professor G. E. Varley, Hope Professor of



Entomology, University of Oxford; Mr. C. A. Norris, British Trust for Ornithology, and the Hon. Mrs. Norris; Dr. Winifred Frost, Freshwater Biological Research Station, Windermere.

Lord Hurcomb and the Hon. Pamela Hurcomb received members and friends and the President subsequently presented the guests and officials of the Union to Her Royal Highness. A bouquet was presented to Her Royal Highness by Miss Angela Walker.

After the Loyal Toast, Lord Hurcomb proposed a toast to The Princess Royal. Mr. E. M. Nicholson proposed the toast of the Yorkshire Naturalists' Union in a speech in which he paid tribute to the Union's work and spoke of its importance in the context of the present day conservation movement. Professor W. H. Pearsall, past secretary, editor and President replied for the Union. Lord Hurcomb proposed the toast of the guests for whom Dr. G. Taylor replied.

Messages of congratulation were received from the British Ornithologists' Union, the Lincolnshire Naturalists' Union and the North-Western Naturalists' Union, besides many individual greetings and good wishes.

Eleven past Presidents of the Union were present at this gathering which was certainly the most notable social event in the history of the Union. The organisation and planning of this function were in the hands of a sub-committee consisting of Miss C. Shaddick, Mrs. W. A. Sledge and Mr. M. M. Sayer and the success of the evening was due in great measure to the hard work and thoroughness of the committee.

The photograph, reproduced by kind permission of the editor of *The Yorkshire Post*, shows Lord Hurcomb presenting Miss Rob to H.R.H. The Princess Royal. Dr. George Taylor is seen on the right and Dr. Sledge on the left.

GRASS WOOD AND THE YORKSHIRE NATURALISTS' TRUST

Grass Wood, in Upper Wharfedale, is very well known to naturalists in the West Riding and the Yorkshire Naturalists' Trust, since its foundation in 1946, has been anxious to secure a footing there, in the interest of field botanists. Of recent years ownership of the wood has changed hands and recently the most interesting area, from a botanical point of view, has come into the possession of the Forestry Commission. Most fortunately the central portion, where the limestone outcrops, is not suitable for tree planting and the Forestry Commission, realising the botanical interests involved, has permitted the Yorkshire Naturalists' Trust to stake out an area of twelve acres or so in the heart of the wood and to administer it. This portion will be leased to the Y.N.T. over a long period at a nominal rental and it is hoped that botanists will visit it as in the past. Access to the wood will not be restricted.

The Y.N.T. has appointed a Management Committee under the Chairmanship of Mr. Paul Holmes, with the assistance of the following members, each representing a local interest:

Paul F. Holmes, M.A.	Malham Tarn Field Centre.
Dr. Arthur Raistrick	Craven Naturalists' Association.
Miss E. Seares	Upper Wharfedale Naturalists' Field Club.
Mrs. A. C. M. Duncan, B.Sc.	Wharfedale Naturalists' Society.
Mr. Allen Butterfield	Crosshills Naturalists' Association.
Mr. A. Hartley (Co-opted)	Forestry Commission.
The Officers of the Yorkshire Naturalists' Trust.	

Botanical reports and records, relating to Grass Wood, will be gratefully received by Mr. Allen Butterfield at New Cottage, Green Lane, Glusbourne, near Keighley. They should state whether, or not, they relate to the area leased to the Trust, as indicated by markers in the wood.

E. WILFRED TAYLOR

JOINT VERTEBRATE SECTION MEETINGS IN 1961

Under the chairmanship of Lt.-Col. H. G. Brownlow the meeting held at Leeds University on March 11th, 1961, heard the Ornithological Report for 1960 presented by Mr. Athol Wallis on behalf of the editorial committee. Appeals were made for members' support of the Unions' bird protection activities, and for the breeding status survey of three species, Reed Bunting, Nuthatch and Corn Bunting, which is being undertaken as a long-term project. Mrs. E. Hazlewood gave a brief report on the question of seal branding and its septic effects which appeared to have been exaggerated.

Mr. G. J. R. Broadhead, head forester of the Wentworth Estates, told of his experiences with nest-boxes in coniferous forests above 1,000 feet in the Pennines. This was a fascinating story of the efficient control of pests by titmice and other hole-nesting species. He also told of a remarkable colonisation by Pied Flycatchers following the transfer of eggs from a more normally situated colony. After the interval, Mr. C. C. Doncaster presented two colour films on Scandinavian birds which were excellent in their presentation and the birds which they showed.

Owing to the regrettable death of Lt.-Col. Brownlow, the chair at the October 14th meeting was taken by Mr. Wilfred Taylor. After interim reports from Spurn Observatory and the Ornithological section, Mrs. Hazelwood presented the annual report of the Mammals section. Mr. A. H. B. Lee, the retiring Convener, was elected Chairman of joint meetings for 1962.

Mr. George de Boer, of Hull University, described the history of the Spurn peninsula, illustrating the development of the promontory with old maps and aerial photographs. This was a most interesting topic for the many members who visit the area.

The evening session was devoted to an illustrated lecture on 'Moles' by Dr. Helga Frankland of the Nature Conservancy. The life cycle of this mammal was fully described and its habits dealt with in detail. The final item was a selection of ornithological slides shown by Mr. Edward Skinner showing birds which he had seen in Kenya. This colourful display proved very interesting.

A. H. B. LEE, *Convener*

The Naturalist

THE YORKSHIRE NATURALISTS' UNION: ONE HUNDREDTH ANNUAL REPORT

The **Ninety-ninth Annual Meeting** was held on December 3rd, 1960, at the Riddings Road Lecture Hall, Ilkley, by invitation of the Wharfedale Naturalists' Society.

The **Presidential Address** entitled 'The Future of the British Flora' was delivered by Professor D. H. Valentine, M.A., Ph.D., F.L.S., and was subsequently published in *The Naturalist*, 3-10, 1961.

The **Presidency for 1962** has been offered to and accepted by Mrs. A. Hazelwood.

The **Excursions in 1962** will be to:

- V.C. 61. Hornsea Mere, July 7th.
- V.C. 62. Saltburn (Whitsun), June 9th-11th.
- V.C. 63. Bawtry, July 21st-22nd.
- V.C. 64. Bolton Abbey, May 26th.
- V.C. 65. Red Scar near Richmond, Sunday, June 24th.

The **One Hundredth Year of the Union** has been a memorable one. In the January-March issue of *The Naturalist* an eventful year was forecast under the distinguished presidency of Lord Hurcomb and the events have fully justified expectations. The year opened auspiciously with H.R.H. The Princess Royal consenting to become our Patron. The honour and enhancement of prestige which her acceptance has conferred on the Union have given great satisfaction and been a source of pride to all members.

A notable event of the year was the publication of the special centenary issue of *The Naturalist* in which the history of the Union and the progress and achievements of its constituent Sections were reviewed in a series of interesting and informative articles.

The Centenary Dinner, held at Leeds University on December 1st and attended by our Patron and many distinguished guests as well as 200 members, associate members and friends, was an unqualified success and a triumph of organisation for the sub-committee which had worked so hard to perfect the arrangements for this important social occasion.

On April 29th a well-attended exhibition meeting was held in the City Museum, Weston Park, Sheffield. The Vice-Chancellor of Sheffield University, Dr. J. M. Whittaker, M.A., D.Sc., F.R.S.E., gave a short address before declaring the exhibition open. The exhibits remained on display during the following week and continued to attract considerable interest. Mr. T. C. L. Bottomley, Hon. Secretary of the Sorby Society, was the local organiser and the success of the exhibition was largely due to his efforts.

The field excursions were, with one exception, favoured by fine weather and attendances were good. As in recent years, however, the members present were largely drawn from the Ornithological, Flowering Plant and Bryological Sections, and reports covering other sections are still inadequate. In his article on the history of the Union Mr. Hazelwood referred to the responsibility for official representation at field meetings which was formerly assumed by each section and regretted that 'this useful custom' had fallen into abeyance. One of the functions served by the field meetings is to ensure the presence of well-informed naturalists in as many branches as possible to whom newcomers can turn for guidance; and they cannot fulfil their use as recruiting grounds for the different sections unless provision is made for proper sectional representation.

The Union has suffered great losses during the past year through the deaths of Dr. W. D. Hincks and Mr. Alfred Hazelwood. Dr. Hincks was a distinguished entomologist with an international reputation and had been closely and actively associated with the Union throughout his career. He was President of the Union in 1945 and a regular attendee at Executive meetings and at all meetings of the Entomological and Mycological Sections for very many years. Mr. Hazelwood was President of the Union in 1958 and has been a valued member of the Ornithological Section for many years. He also regularly attended Executive meetings and was to have taken over the editorship of *The Naturalist* next year. Their deaths are mourned by all who knew them and have left gaps in the ranks of the Union which will be extremely difficult to fill. Other losses through death during the past year

include Mr. Rex Procter, formerly for many years an active member of the Vertebrate Section in which he held official positions, and Dr. R. G. Abercrombie of Sheffield, who had been a member for thirty years.

Membership

At the time of writing membership of the Union comprises 2 Honorary Life Members, 14 Life Members, 441 Ordinary Members, 44 Family Members, 15 Junior and Student Members, and 41 Societies.

New Members

- Bannister, R. C. A., 45 Hymers Avenue, Hull (Orn.).
 Barlex, J., Flat 11, 111 Thorne Road, Doncaster (Orn.).
 Brook, Mrs. N. (F), 41 Scholey Road, Rastrick, Brighouse.
 Blackburn, Miss K. (Student), 4 Spring Bank Road, Gildersome, Leeds (Orn.).
 Butler, R. F. E., 88 Harrowden Road, Doncaster (Orn.).
 Clark, S. P., Rose Cottage, Weeton, near Huby, Leeds (Mammals).
 Colhoun, Prof. J., D.Sc., F.L.S., Dept. of Botany, The University, Manchester 13 (Crypt. Bot.).
 Colhoun, Mrs. J. (F).
 Davies, W., Dept. of Agriculture, The University, Leeds 2 (Entom., Coleopt.).
 Densley, M., N.D.D., A.T.D., 50 Carr Manor View, Leeds 17 (Orn.).
 Doughty, Bro. R., F.S.C.J., Missioni Africane di Verona, Via S. Pancrazio 17, Roma, Italy.
 Duckworth, C. C., 15 Villa Road, Bingley.
 Evans, Dr. P. R., B.A., Ph.D., M.B.O.U., 'Sunnyside', Ampleforth, York (Orn.).
 Fincher, F., Randan Wood, Woodcote, Bromsgrove, Worcs. (Myc., Orn., Bot., Ent.).
 Forster, Dr. J., 6 Victoria Crescent, Horsforth, Leeds (Orn.).
 Fox, Dr. B. W., B.Sc., Ph.D., 287 Bolton Road, Atherton, near Manchester (Bot., Ent.).
 Gillies, Miss Christine, Eversleigh, Main Road, Ridgeway, near Sheffield (Orn., Vert.).
 Graham, Rev. G. G., The Vicarage, Wheatley Hill, Durham (Bot.).
 Hurcomb, The Rt. Hon. Lord., G.C.B., K.B.E., 47 Campden Hill Court, London, W.8 (Orn.).
 Lefevre, Miss H., B.Sc., Beckside, Linton, Skipton (Bot.).
 Lord, Mrs. Edith, B.Sc., 7 Rosewood Avenue, Burnley, Lancs. (Bot.).
 Mallinson, D., 16 The Ridgeways, Linthwaite, Huddersfield (Orn.).
 Mawby, P. J., Winder House, Sedbergh (Orn.).
 Naylor, G. R., B.Sc., 9 Edgbaston Close, Leeds 17 (Orn.).
 Paterson, A. (Junior), 24 Fairfield Road, Hull (Orn.).
 Pemberton, R. T., B.Sc., Ph.D., 28 Maude Avenue, Baildon, Shipley (Vert., Orn.).
 Pollard, R. S., Ackworth Cottage, Cloughton, Scarborough.
 Porter, R. (Student), 20 Church Lane, Wheldrake, York (Orn.).
 Potter, J. M., 19 Moseley Wood Gardens, Cookridge, Leeds 16 (Mammals).
 Richards, E., 51 Lindley Street, Acomb Road, York.
 Salford, City of, Libraries.
 Sankey, Mrs. V. O., Bretton Hall, Wakefield.
 Saville, J. M., Rydal House, Church Lane, Gartorth, near Leeds.
 Smith, J. M., B.Sc., A.R.I.C., 7 Back Lane, Guiseley, Leeds (Bot.).
 Sowerby, W. B. H., 24 Windsor Grove, Morecambe, Lancs. (Bot.).
 Waterhouse, G. E. C. (Student), The Limes Hostel, St. John's College, York (Orn., Bot.).
 Wilson, C. H., 2 Ancaster Road, Leeds 16 (Orn.).
 Young, F. H., 20 Southgate, Hornsea (Orn.).

Deaths

We record with regret the death of the following:

Abercrombie, R. G.	Hincks, W. D.
Baxter, G. V.	Lambert, H. Holmes
Brownlow, H. G.	Procter, R.
Forrest, W. J.	Ward, W. J. V.
Harrison, F. E.	Williamson, H. J.
Hazelwood, A.	

Resignations

Bates, S. S.	Peacock, J. A.
Booth-Thompson, Miss C.	Reynolds, C.
Borrett, J. A. S.	Thompson, Christopher
Geyer, T. A.	Trimingham, J. S.
Johnson, A.	Watson, T.
Kloet, G. S.	Yeates, G. K.

Spenn Valley Literary and Scientific Society.
Yorkshire Archaeological Society.

New Affiliated Societies

The Sedgwick Society, Sedbergh School, Sedbergh, Yorks. (Hon. Sec.: M. G. Jackson, Powell House, Sedbergh).
Swarthmore Birdwatchers' Club (Hon. Sec.: Miss E. L. Gray, 26 Temple Court, Halton, Leeds, 15).

Change of Address

Bilbrough, Mrs. L. M., Cross Bank Road, Carlinghow, Batley.
Clarke, D. D., 26 Marlborough Avenue, Hull.
Crosbie, Dr. K. C., Warcop House, Warcop, Appleby.
Elenor, Mr. and Mrs., H. B., 44 Charnock View Road, Gleadless, Sheffield 12.
Kitchen, Rev. T. B., Dapwell Hey, Southcombe Road, Chagford, Devon.
Knight, W. J., Gwelfor, 4 Menai Villas, Menai Bridge, Anglesey.
Lawrence, I. C., 57 The Oval, Brookfield, Middlesbrough.
Lord, J., 'Orduna', 155 Tamworth Road, Sutton Coldfield.
Lord, Miss G. W., 12 Ramshill Road, Scarborough.
Lamb, Miss J., 8 Margaret Street, Wakefield.
Lawton, F., 'The Laurels', Salisbury Road, Hoddesdon, Herts.
Millin, Dr. D. J., 80 Gales Drive, Three Bridges, Crawley, Sussex.
Nelson, J. D. E., 11 Montgomery Road, Barnard Castle, Co. Durham.
Parkinson, R. C., The Larches, Panorama Road, Ilkley.
Ramus, Mrs. Y., 7 St. James's Square, Boroughbridge.
Simms, Colin, 96 Hampton Road, Southport, Lancs.
Skinner, E. S., Sage Meadow, Shannon Close, Ilkley.
Swallow, P., 297 Bradford Road, Otley.
Shaddick, Miss C., Flat 9, Strayside Court, Victoria Road, Harrogate.
Slater, Dr. Margaret E., Lastingham, York.
Spittle, R. J., 'Clouds End', Foley Walk, Malvern, Worcs.
Stubbs, F. B., 62 High West Road, Crook, Co. Durham.
Shoemith, R., Brantwood, Rawson Avenue, Halifax.
Tomlinson, T. B., Bonfield, 12 Lake Street, Leighton Buzzard, Beds.
Willoughby, The Hon. M., North Grimston House, Malton.
Walker, A. B., The Haggs, Grosmont, Whitby.
Wright, D., 25 Clifffield Road, Meersbrook, Sheffield 8.
Yeoman, Miss R., Spring Cottage, Osmotherley, Northallerton.

Change of Secretary

Keighley Natural History and Literary Society (Hon. Sec.: Mrs. E. V. Thompson, Craigmere, Moss Carr Road, Keighley).

MAMMALS, REPTILES, AMPHIBIANS AND FISHES

Mammalia (Mrs. A. Hazelwood): *Cheiroptera*: Three Pipistrelles were seen in the grounds of Wentworth Training College on May 20th, 1960.

Lagomorpha: Hares continue abundant is the report of all correspondents. The numbers of Rabbits continue to fluctuate in various areas and myxomatosis is still reported but Mr. L. Carr has suggested that individuals lying out survive even when the colonies have been wiped out. Blue Hares are said to be numerous on Langsett Moors.

Rodentia: Mr. Beck has reported an increase in the numbers of Grey Squirrels (since the ending of the 2/- bounty) in the vicinity of Knaresborough, and several have been seen near Hull. Red Squirrels have been seen in several localities including

the Barnsley area, at Hornsea Mere and Cherry Burton (E. Riding), and at Grassington. There were 170 Black Rats destroyed during 1960 aboard foreign ships at Hull, and in the same port 111 were destroyed in five days on a single Pakistani ship in August, 1961. There were signs of a population peak of Short-tailed Field Voles in Nidderdale in January, 1961 (A. Walker) but there is no mention of unusual numbers elsewhere. Four trapped in a garden at Linton Falls were observed to be eating wallflower plants.

Insectivora: Eight Common and four Pygmy Shrew skulls were recovered from Barn Owl pellets on Keyingham Marsh. Pygmy Shrews are also reported to have been trapped at Knaresborough on September 10th. A Hedgehog which had been hibernating among garden refuse which had later been burned was found to have its spines burned half way down their length; later it appeared to grow new spines. One casualty was seen at Hull on March 31st. Hedgehogs are frequently reported from urban surroundings and the remains of one were found in a trap at 1,250 ft. on Grassington Moor. Moles do not appear to be affected by modern insecticides and vermicides as they are still widely reported in Yorkshire; one was recorded as active on January 9th, 1961, at Darrington.

Carnivora: A white Stoat was seen on March 3rd, 1961, at Lealholm, Goathland. The species is generally reported to be frequent and appears to have readjusted itself to the absence of rabbits. One in a garden at Darrington in July was seen to be trying to reach a pet rabbit in its hutch, and another at Rishworth had killed ten ducklings. A Stoat was seen on Dodd Fell near Hawes, at an altitude of 2,000 ft. on April 15th. There are fewer records of Weasels but one was seen in a garden at Horsforth doing antics to catch blackbirds on the lawn (P. Baldwin), whilst a 'small party' was seen crossing a road in Barnsley on September 12th when one was actually run over. A Grey Seal is reported to have frequented Market Weighton canal whenever the lock gates were open. The Fox seems to remain plentiful in many areas and there seems to be little evidence of poisoning from seed-dressing carcasses. A pair bred in Wentworth College grounds but three cubs were killed; there were the remains of rats and woodpigeons at the earth. Badgers have been reported from many districts but too often they are reported to have been gassed out. It would seem that there is a need for propaganda as to the general harmlessness of these animals in the hope that a halt may be called to their undeserved persecution. Otters would appear to have been seen rather more than usual during this year.

Ungulata: Odd Fallow Deer have been reported from the Barnsley area.

Reptilia: The following records have all been kindly supplied by Mr. F. de Boer. Slow-worm from Sleightholmedale, Riccal Dale and Goathland all in N. Yorks. Common Lizard from Sleightholmedale, Patrington Haven, Spurn, Kelsey Hill in Holderness and at Springhead near Hull. Grass Snake from Arram and Risby, both near Beverley, Rose Hill Farm near Paull, Kelsey Hill in Holderness, Riccal Dale, N. Yorks., Houghton Moor near Market Weighton and from Kilnsea. The Adder from Cliffe Woods near Hotham and Allerthorpe Common in East Yorkshire and from Sleightholmedale, Danby, Goathland and Riccal Dale in N. Yorkshire.

Amphibia: Great Crested Newts have been reported from Castleton and Pontefract, Dryad's Hill near Leeds, in the static tank at Wentworth Training College near Barnsley and from several localities near Hull and by Mr. F. de Boer from Rose Hill Farm near Paull, Brough, Cottingham, West Ella and Springhead. The Smooth Newt has been recorded from Castleton, Pontefract, Wentworth Training College and many localities near Holderness also by Mr. de Boer from West Ella, Rose Hill Farm, Cottingham, Setting Dyke and Cottingham Drain near Hull, Brough, Kilnsea and from Willerby.

The Palmate Newt was seen at Roundhill Reservoir, altitude 750 ft. near Masham on April 16th.

The Common Toad has been recorded from Cottingham, Kirk Ella, Cottingham Drain at Hull, Hornsea Mere, Rose Hill Farm, Hedon and Easington by Mr. de Boer. Frogs were seen in a pond at Pontefract on March 6th this year and although few special reports have been received it would appear that certainly in many districts, widespread, this was a frog's spring. At Newton near Castleford on March 12th, Mr. Dickens counted 58 frogs dead on a stretch of road about 250 yards long and observes that there were equally as many stretched out at either end of the length of road on which the count was made. Frog trouble was also mentioned in the *Yorkshire Evening Post* on March 18th, when two families living in cottages at a mill yard near Horbury

Bridge had actually appealed to the Horbury Public Health Department for its assistance against the 'nocturnal battalions.' The occurrence of Frogs is also recorded by Mr. de Boer from Anlaby, Willerby, West Ella, Rose Hill Farm, Cottingham, Hornsea Mere, Arram, Risby, Sleightholmedale, Hedon and Patrington. Spawn was seen in a peaty pond on Dodd Fell at 2,000 ft. on April 15th; some of it was mouldy and none was seen to have hatched.

Pisces: A Ray's Bream measuring 23 ins. in length and 8 ins. in depth occurred at Spurn on December 11th, 1960. A Sea Trout weighing 16 lb. 4 oz. was caught on rod and line in a small estuary south of Bridlington. The fish was sent to Dr. Frost who reported it to be eight years of age with only one spawning so that it had made rapid growth.

In conclusion may I thank all those naturalists who have so kindly made this report possible by sending their notes and observations which, no matter how short or of how common an animal, have helped to build up the general picture and to add new localities in our distribution records. Our thanks, too, are due to those affiliated societies which have also kindly made their records available to us—Wentworth Training College near Barnsley, Hull Scientific and Field Naturalists' Club, Barnsley Field Naturalists, Halifax Naturalists' and Scientific Society, Upper Wharfedale Field Naturalists, Castleford and District Naturalists' Society and the Doncaster and District Ornithological Society.

ORNITHOLOGY

Interim Report 1961 (Athol J. Wallis): The full report for 1960 was published later than has been the accepted practice for many years; later, too, than was originally envisaged when the changed arrangements referred to a year ago were introduced. Much experience has been gained and plans will be made to ensure that the report for 1961 appears, at latest, in July when the July-September issue of *The Naturalist* is normally published.

The March meeting of the Section was held as usual at Leeds, was well attended and a warm welcome was extended to Christopher Doncaster who showed his colour film of birds in Sweden and Denmark.

A mild, snowless winter, followed by a dry February and an early spring resulted in some early nesting records, mainly Song Thrushes—two nests at Masham had eggs by March 15th and one clutch hatched on March 26th. Everything was far forward by the end of March, when cooler weather, with snow on April 4th, heralded an unsettled month which played havoc with Lapwing broods above the 800-foot level.

Lack of severe weather during January and February probably accounted for the scarcity of the less common ducks, grebes and divers inland. However, six Smew occurred at Eccup and two Long-tailed Ducks at Swinsty Reservoir in February.

Short-eared Owls were numerous in Upper Nidderdale and bred early and in larger numbers than usual in association with the abundance of Short-tailed Voles.

Early arrivals of some migrants was noted and the spring passage was varied in extent and timing, for example Wood Sandpipers and Black-tailed Godwits were seen at Fairburn in April and May but the Black Tern passage was less concentrated and less numerous than in 1960.

Several interesting waders turned up during the summer months and by late July the return passage was well under way. No exceptional 'rushes' have occurred but many noteworthy species have been recorded from various parts of the county.

At Spurn the number of birds verified is likely to be less than in 1960 but most of the less usual species have turned up. The only Woodcock verified in 1960 has turned up on latitude 64 in Sweden.

The use of poisons on the land continues to increase and many of us must fear very marked effects over a wide range of bird species. For example, in the Yorkshire Dales, Warblers of all kinds have been fewer, as well as the finch species. It is within living memory that changes in farming practices brought about the almost complete extermination of the Corncrakes and the effects of the uncontrolled use of insecticides and weed killers could be much more widespread. No poison, even D.D.T., can be used without poisoning much more than the insect or plant for which it is intended.

CONCHOLOGY

(Mrs. E. M. Morehouse): In April Mr. E. Dearing took eighteen different species from the River Aire and adjoining land at Skipton. *Helix nemoralis* L., *H. hortensis*

Müll., *Arianta arbustorum* L., *Hygromia rufescens* Penn. (under rotting log), *Pyramidula rotundata* Müll., *Vitrea alliaria* Mill., *V. pura* Alder, *Cochlicopa lubrica* Müll., and *Clausilia rugosa* Pult. (one dead shell), were all taken in nettle beds. From the Aire he collected *Sphaerium corneum* L., *Dreissena polymorpha* Pallas, *Pisidium* sp., *Anadonta cygnea* L. (juv.), *Neritina fluviatilis* L., *Bithynia tentaculata* L., *B. leachii* Shepp., *Paludetrina jenkinsi* Smith (also abundant in small streams at Bank Newton near Gargrave), *Valvata piscinalis* Müll., *Planorbis corneus* L. (juv.), *P. spirorbis* L., *P. vortex* L., *Limnaea pereger* Müll., *L. auricularia* L., *L. stagnalis* L., *L. palustris* Müll., *L. truncatula* Müll., and *Ancylus fluviatilis* Müll.

Mr. Robinson records the following from fields and a pond near the Three Nuns Hotel, Wakefield Road, *Limnaea pereger* Müll.—small but in good numbers—*Vitrea alliaria* Mill., *Paludetrina jenkinsi* Smith, and *Ancylus fluviatilis* Müll.

At the Y.N.U. Whitsuntide Meeting eleven molluscs and five slugs were identified from Hall Park, Slaidburn; and at Gunthwaite thirteen species were found. These are enumerated in the reports of the field meetings.

The Yorkshire Conchological Society visited Combe Scar, Malham, on September 16th and took a dozen species, viz., *Clausilia dubia* Jeff., *Cochlicopa lubrica* Müll., *Arianta arbustorum* L., *Helix nemoralis* L., *H. hortensis* Müll., *Hygromia rufescens* Penn., *Pyramidula rotundata* Müll., *Vitrea pura* Alder, *V. alliaria* Mill., *Laurea cylindracea* Da Costa and *Arion ater* L.

Mr. Thompson reports well-grown *Clausilia laminata* Mont. from woods near Fairburn and Mr. Armitage took *C. cravenensis* at the head of Pen-y-ghent Gill in June. Numerous *Succinea putris* L. from Hemsworth Dam and *Arianta arbustorum* L. from an overgrown lane at Draughton have also been reported.

ENTOMOLOGY

(J. H. Flint): No observer reports that 1961 was a good year for collecting and yet it started well. Following a mild winter, insects were on the wing early and warm days in February and early March saw plenty of activity. Beetles and bugs were in flight in warm sunshine on February 19th and March 3rd. On March 6th, a small Tortoiseshell butterfly was seen in flight at Horsforth. By the middle of March the early Hymenoptera were about; the sawflies *Dolerus nitens* Zadd. and *D. liogaster* Th. were active in the Leeds district on March 16th, an early date for this area, while on the previous day the Bumblebee *Bombus terrestris* (L.) had been seen in flight at Adel, where numbers of solitary bees (*Andrena* spp.) had been visiting the flowers of sallow. On March 25th a number of Large White butterflies were seen at Tadcaster. A cold spell lasting into April, with a fall of snow on April 4th, effectively put an end to a promising spring. Thereafter, reports are chiefly of scarcity; this in all the orders. But not all the insects have been scarce. Aphids were abundant; most kinds of beetle were in normal numbers. Without careful experimental evaluation of numbers, reports tend to be subjective, but there is a general consensus of opinion that insects are 'better' after a severe winter and this is paralleled by evidence that certain Lepidoptera will only emerge from the pupa after a definite period at a low temperature. A discussion of this topic has been arranged for the Section's next meeting.

The Section has suffered a grievous loss by the death of its Chairman, Dr. W. D. Hincks, who was also its recorder for Hymenoptera. For forty years he was an active member of the Section and for the greater part of that time he was one of its principal officers and always one of its keenest supporters. He will be greatly missed. Pressure of business has caused the resignation from office of the Lepidoptera Recorder, Mr. F. Hewson, and his last report appears below. In recent years he has done an enormous amount of work for the Lepidoptera Committee and it is largely due to his efforts that this committee is now so active.

Lepidoptera: (F. Hewson); All observers are agreed that this has been another poor year for butterflies, because of the poor weather. Moths, too, suffered because of the cold and wind at the height of the season. Even the common 'White' butterflies were few in spring and summer throughout the county, although S. M. Jackson at Selby and R. S. Pollard at Scarborough noted the autumn broods to be common. Resident species of moths were similarly reported, earlier ones down in numbers, autumn species almost back to normal. The regular migrant moths were chiefly commented upon because of their scarcity. Two species new to Yorkshire have been reported, and there are a number of new localities or additional reports which seem

to indicate breeding in the areas referred to. I am grateful to the following observers: J. Briggs, W. E. Collinson, R. Crossley, C. R. Haxby, A. M. R. Heron, J. Hudson, S. M. Jackson, R. S. Pollard, C. I. Rutherford and C. C. Smith.

- Apatele alni* L. (Alder). (62) Pickering, M.V.L., one 17/6; J.B. and S.M.J.
Colocasia coryli L. (Nut-Tree Tussock). (62) Pickering, M.V.L., one 17/6; J.B. and S.M.J.
Nonagra typhae Thun. (Bulrush Wainscot). (63) Baildon, M.V.L., one taken by Mr. S. Crooks, 8/8; J.B.
Panemeria tenebrata Scopoli (Small Yellow Underwing). (64) Brearton, near Ripley, 21/5; A.M.R.H.
Zenobia subtusa Schiff. (Olive). (64) Far Headingley, Leeds, M.V.L., 23/8; C.C.S. (63) Wakefield, M.V.L., 9/8; A.M.R.H.
Meristis trigrammica Hufn. (Treble Lines). (62) Pickering, M.V.L., two 17/6, J.B. and S.M.J.
Hydraecia ophiogramma Esper. (Double Lobed). (63) Triangle, Halifax, M.V.L., 28/7/60. Identification confirmed by the British Museum; W.E.C.
Procus furunculus Schiff. (Cloaked Minor). (64) Far Headingley, Leeds, M.V.L., 31/7, 27/8, 28/8, 1/9; C.C.S.
Cucullia absinthii L. (Wormwood Shark). (63) Baildon, near Shipley, M.V.L., a male 12/8, a female 7/8, taken by Mr. S. Crooks. Probably breeding in this district as three were taken in 1959 and others in 1960; J.B. (Note the spread of this species in Yorkshire. First recorded from Sheffield, where larvae were abundant on a slag heap, September, 1953, N. L. Birkett and W. Reid. Kirkstall, Leeds, one 1956, A. Kennedy. Wakefield, 19/7/57, A. M. R. Heron. Common at Wath-on-Dearne in 1958, J. H. Seago. Halifax, 1959, W. E. Collinson. Larvae found at Wath, Wombwell and Barnsley, early September, 1959, evidently established over a wide area in South Yorkshire, J. H. Seago. F.H.).
Leucania obsoleta Huebner (Obscure Wainscot). (61) Skipwith Common, M.V.L., one 8/7; J.B. and C.R.H.
Ophiusa pastinum Treit. (Blackneck). (62) Three taken on the cliffs north of Scarborough and one south of Ganton 11/7; C.I.R. and E.R.
Scopula immutata L. (Lesser Cream Wave). (63) Deffer Wood, 27/5; A.M.R.H.
Eupithecia albipunctata Haworth (White-Spotted Pug). (62) Near Pickering, one 17/6; S.M.J.
E. sobrinaia Huebner (Juniper Pug). (64) Far Headingley, Leeds, M.V.L., one 10/8, one 4/9, an extremely late appearance; C.C.S.
E. innotata Hufn. (Angle-Barred Pug). E.R. and C.I.R. beat about a dozen small larvae from Buckthorn at Spurn, 7/8/60. Each obtained two or three pupae and from these each had an imago emerge this year. New to Yorkshire.
Rhodometra sacraria L. (Vestal). (63) Baildon, M.V.L., two 31/8, one 19/9, by Mr. S. Crooks; J.B. New to Yorkshire.
Biston betularia L. (Peppered). (61) Skipwith, 11/7, one speckled specimen among many black ones; C.I.R.
Anagoga pulveraria L. (Barred Umber). (62) Near Pickering, 13/5; A.M.R.H.
Asphalia diluta Schiff. (Lesser Lutestring). (63) Wakefield, M.V.L., 8/8, probably second brood; A.M.R.H.
Celerio galii Von Rott. (Bedstraw Hawk). (63) Baildon, M.V.L., 23/7, by Mr. S. Crooks; J.B.
Herse convolvuli L. (Convolvulus Hawk). (63) Baildon, M.V.L., 3/10, by Mr. S. Crooks; J.B.
Saturnia pavonia L. (Emperor). (62) Sutton Bank, a melanic specimen taken 14/5; A.M.R.H.
Zygaena lonicerae Von Scheven (Narrow-Bordered Five Spot Burnet). (63) Cromwell Bottom, Elland, 21/7; R.C.

Errata—Correction to 1960 report. *The Naturalist*, 1961, page 17. The record of *Xylena vetusta* Huebner should appear against *X. exoleta* L.

Hemiptera (J. H. Flint): The year started quite well and the mild open weather in February brought several species out of hibernation. On 19/2/61 numbers of *Erythroneura angustata* Leth. were seen flying around brambles and hawthorns near Bardsey on a warm, sunny afternoon; several species of Heteroptera were active in this month and in March. A very cold spell in late March followed by snow in

early April put a stop to this early activity. It was probably this cold spell which caused the great scarcity of some forms of Homoptera later in the year. The early stages of many Delphacid hoppers which had been seen to be active in March undoubtedly suffered severely and in May and early June it was sometimes difficult to sweep more than a few adults of *Delphacodes* in localities where they normally swarm. Jassid hoppers were similarly scarce later in the year, though not so markedly so as in the case of the Delphacids. Insufficient collecting of Heteroptera has been done to make any reliable estimate of relative abundance possible. One of the more interesting discoveries was of a quite strong, though scattered, colony of the Lygaeid bug *Kleidocerys truncatulus* (Walker) on Ravenscar Moor on 15/8/61. The bug has been taken here before and it was swept off heather and/or heath. Southwood and Leston (1959) state that 'It is found almost entirely on heather and heaths, but which of these is its food-plant is unknown.' At Ravenscar it was not found in the pure stands of heather at all, but only where the heather grew among *Nardus*, *Carex* and *Juncus* in damp areas. Lack of time prevented further investigation.

The species listed below were collected by the writer and in the main comprise those new to Yorkshire or the Vice-counties.

HETEROPTERA

†*Psallus perrisi* Wagner. (64) Meanwood, Leeds; 26/6/60. First identified in Britain in 1957; probably common.

†*Sthenarus rotermundi* Scholtz. (64) Bramhope; 16/7/61. A few specimens on *Populus alba*; this is the most northerly record.

HOMOPTERA

†*Idiocerus varius* F. (64) Collingham Bridge; 15/7/60. On *Salix purpurea*.

I. elegans Flor. (64) Moss Plantation, Shadwell, Leeds; 12/7/60. Golden Acre, Leeds, on *Salix cinerea*; 7/8/60. Collingham Bridge, on *Salix purpurea*, 15/7/60. *I. laminatus* Flor. (*64) Adel, Leeds; 17/7/60. On *Populus alba*.

†*Allygus modestus* (Scott). (64) Collingham Bridge; 15/7/60. One male on a dry grassy bank.

Sonronius quadripunctata Fall. (= *dahlbomi* Zett.). (*61) Allerthorpe Common; 21/6/59.

Macrostelus variatus Fall. (*64) Saw Wood, Thorner; 8/10/61.

Dikraneura mollicula Boh. (*64) Adel, Leeds; 29/9/61.

†*Kelisia perspillata* (Boh.). (64) Etchell Crag, Thorner; 31/8/58. A male on the dry limestone slope.

†*Delphacinus mesomelas* Boh. (64) Etchell Crag, Thorner; 5/6/60. By sweeping damp pasture by the stream.

Delphacodes albofimbriata Sig. (*63) Gunthwaite; 3/6/61. By sweeping marshy ground among *Juncus*, etc.

Coleoptera (J. H. Flint): This does not appear to have been a very remarkable year. The mild winter and warm weather in the early months of the year brought many beetles out of hibernation early and there was plenty of activity in February and March. Impressions of several collectors that the summer months were unprofitable may indicate a scarcity of beetles at that time, a lack of diligence, or just a failure to be at the right spot at the right time; subjective impressions can be misleading. At least one can say that some of us found fungus beetles in numbers in the early spring and in the autumn.

An interesting note is to hand from Mr. Colin Simms who has been studying the pellets of the kestrel in the Bilsdale and Scugdale areas of the Cleveland during the period 1957-60. Among the beetle remains that he found in the pellets more than once were those of *Carabus granulatus* L. and *C. nitens* L., both being beetles that are now rarely recorded in the county. There have been occasional records of *C. nitens* during recent years, but only two of *C. granulatus* since 1923. These latest notes would indicate that the beetles are to be found if diligently sought.

The Rev. T. B. Kitchen, whose records, regrettably, rarely reach these pages, had the extraordinary good fortune to find specimens of *Carabus glabratus* v. *lapponicus* Born and *Miscodera artica* Pk. under a single stone on Helmsley Moor at about 780 ft. Both beetles, normally considered montane, are well known from these moorlands but are hard to find and records are scarce.

At present, while a new county list of beetles is being prepared for publication, the records are maintained in groups of families by Messrs. E. W. Aubrook, E. F.

Gilmour, W. O. Steel and the writer, and our thanks are due to those collectors who have submitted records. Initials used are those of the above.

- Feronia macra* (Marsh.) (64) Seacroft, Leeds; 19/3/61. B. Dawson (det. J.H.F.), A scarce and local beetle in Yorkshire; several specimens were found. It is remarkable that it could remain overlooked in this area and it is possibly an introduction.
- Haliplus apicalis* Thoms. (*63) North Common, Thorne; 4/3/59. A single male. (J.H.F.).
- Choleva fagniezi* Jean. (64) Stump Cross Cavern, Pateley Bridge; 2/11/60. V. Pratt (det. J.H.F.). An uncommon beetle and only the second record for V.C. 64.
- Ptinella aptera* (Guer.) (63) Canal bank between Brighouse and Elland; 1961. Numerous winged examples under bark of elm tree felled, probably, in 1959. E.W.A.
- Malthodes mysticus* Kies. (63) Thackley, Bradford; 25/6/61. J.H.F.
- Hypnoides maritimus* (Curt.) (64) Litton; 18/6/61. Several specimens on large shingle bank, in company with *H. dermestoides* (Hbst.). J.H.F.
- Elmis maugei* s. *megerlei* a. *aenea* (Meull.) (62) Foulbridge; 28/5/61. On a tree branch brought up from the bed of the Derwent. E.W.A.
- Liminus tuberculatus* Muell. With the above.
- Anthrenus muscorum* (L.) (62) West Ayton; 26/4/61. On *Heracleum sphondylium*. E.W.A.
- Omosita depressa* (L.) (62) Duncombe Park, Helmsley; 14/9/60. Miss J. Parkin. Few records, the only previous one in this vice-county was in 1902, Saltburn Woods.
- † *Meligethes solidus* (Kug.) (64) Etchell Crags, Thorner; 8/61. A single specimen obtained by sweeping over Helianthemum at the exact spot where two years a single *M. brevis* Stm. was obtained. This locality had been searched on several subsequent occasions for further examples unsuccessfully. J.H.F.
- Cis fagi* Waltl. (†64) Adel, Leeds; 6/2/61. In dead *Polystictus versicolor*. J.H.F.
- C. bilamellatus* Fowler (64) Blackmoor, Scarcroft; 12/2/61. Abundantly in dead and crumbling *Polyporus betulinus*. J.H.F. An account of the spread of this Australian beetle is given by Paviour-Smith (1960, *Proc. R. Ent. Soc. Lond.*, **35**, 145-155) who first found the beetle in Yorkshire at Skipwith Common in 1959. The following year Mr. E. W. Aubrook, working independently, again found it at Skipwith and Dr. Paviour-Smith took specimens at Askam Bog but could not find it elsewhere in the West and North Ridings. The writer made a thorough search at Adel, to the west of Leeds, but found no traces. At Scarcroft, to the north-east of Leeds, however, the beetle was plentiful in two localities. Notes of its further spread would be welcome.
- Oedemera lurida* (Marsh.) (62) Snainton; 1/7/61. On house window. E.W.A.
- Pogonocherus hispidus* (L.) (64) Bishop Thornton, near Ripley; 4/6/61. J. L. Newton.
- Tetrops praeusta* (L.) (64) Wothersome, near Thorner; 28/5/61. J.H.F. The only other record for the vice-county is from Askam Bog.
- Dorcus parallelipedus* (L.) (63) Doncaster, 10/61. Adults and larvae from a tree stump. A. H. Wright.
- Donacia semicuprea* Pz. (63) Canal between Brighouse and Elland. Adults are common here in summer and a cocoon containing an adult was found on the roots of *Glyceria maxima*. E.W.A.
- Galerucella nymphaeae* (L.) (63) Gunthwaite; 3/6/61. (64) Golden Acre, Leeds; 22/5/61. In both cases, by the margins of the lakes. J.H.F.
- Lochmaea crataegi* (Forst.) (61) Allerthorpe Common; 23/4/59. Miss J. Parkin.
- Apion ulicis* (Forst.) (63) Farnley Tyas, Huddersfield; 6/61. Flockton Moor; 1/9/61. On gorse. E.W.A. Mr. Aubrook writes that he has not previously found this beetle in the Huddersfield district and that Maurice Barnes also did not find it there.
- Microtrogus picirostris* (F.) (62) Snainton; 1/7/61. E.W.A.
- Magdalis armigera* (Geoff.) (64) Wothersome, near Thorner; 28/5/61. J.H.F.
- Ceuthorrhynchidius horridus* (Pz.) (62) Rievaulx; 9/7/59. J. Armitage.
- Ceuthorrhynchus depressicollis* (Gyll.) (64) Scarcroft; 9/5/60. J.H.F.
- Amalus scortillum* (Hbst.) (64) Knaresborough; 22/5/60. J.H.F.
- Dryocoetinus alni* (Georg.) (64) Etchell Crags, Thorner; 16/4/61. J.H.F.

Plant Galls (E. F. Gilmour): 1961, has not, in my opinion, been a good collecting year for Plant Galls. The previous mild winter might have been assumed to presage a good year, but the poor summer was at least not conducive to a great deal of field work.

A few records are given below. The initials in the list stand for the following persons—F. E. Branson (F.E.B.), H. E. Flint (H.E.F.), T. F. Medd (T.F.M.), Miss C. M. Rob (C.M.R.).

	<i>Agent</i>	<i>Plant</i>	
HYMENOPTERA	<i>Andricus marginalis</i> (Schlecht.) (64) Birkham Wood, Knaresborough, 3/10/61; F.E.B.	<i>Quercus robur</i> Linn.	
	<i>A. kollari</i> (Hartig) (62) Warthill, York, 1/10/61; T.F.M.	<i>Quercus robur</i> Linn.	
	<i>Cynips longiventris</i> (Hartig) (64) Kirkham Wood, Knaresborough, 3/10/61; F.E.B.	<i>Quercus robur</i> Linn.	
	<i>Rhodites rosae</i> (Linn.) (64) Bardsey, -9/61, H.E.F.	<i>Rosa canina</i> Linn.	
	<i>R. eglanteriae</i> Hartig (64) Sicklinghall -9/61, H.E.F.; Wyke, -10/61, H.E.F.	<i>Rosa canina</i> Linn.	
	<i>Biorhiza pallida</i> (Oliv.) s.g. <i>quercus-</i> <i>terminalis</i> (Fabr.) (64) Birkham Wood, Knaresborough, 15/5/61, F.E.B.	<i>Quercus robur</i> Linn.	
	<i>Pontania bridgmanii</i> (Cameron) (62), Ireton Lane, nr. Scarborough, 2/10/61, C.M.R.	<i>Salix caprea</i> Linn.	
	<i>P. proxima</i> (Lepel.) (64) Adel, Leeds, 7/9/61, H.E.F.	<i>Salix alba</i> Linn.	
	<i>P. proxima</i> (Lepel.) (64) Shadwell, Leeds, -9/61, H.E.F.	<i>Salix fragilis</i> Linn.	
	<i>P. triandrae</i> Benson (64) Bramhope, nr. Leeds, -7/61, H.E.F.	<i>Salix triandra</i> Linn.	
	<i>Euura amerinae</i> (Linn.) (64) Bardsey, -9/61, H.E.F.	<i>Salix pentandra</i> Linn.	
	<i>Neuroterus quercus-baccarum</i> form <i>lenticularis</i> (Oliv.) (62) Warthill, York, 1/10/61; T.F.M. (64) Adel, Leeds, -1/61; H.E.F.	<i>Quercus robur</i> Linn.	
	DIPTERA	<i>Dasyneura filicina</i> (Kieff.) (64) Birkham Wood, Knaresborough, 10/6/61; F.E.B.	<i>Pteridium aquilinum</i> Linn.
		<i>Pegohylemyia signata</i> Brischke. (64) Birkham Wood, Knaresborough, 10/6/61; F.E.B.	<i>Dryopteris filix-mas</i> (Linn.)
		<i>Wachtliella rosarum</i> (Hardy) (64) Goldsborough Park, nr. Knares- borough, 4/6/61; F.E.B.	<i>Rosa canina</i> Linn.
<i>W. stachydis</i> (Breimi-Wolf.) (64) Birkham Wood, Knaresborough, 3/10/61, F.E.B.		<i>Stachys officinalis</i> (Linn.)	
HOMOPTERA		<i>Brachycaudus myosotidis</i> (Koch) (64) Goldsborough Park, nr. Knares- borough, 4/6/61, F.E.B.	<i>Plantago major</i> Linn.
	<i>Hyperomyzus lactucae</i> (Linn.) (64), Goldsborough Park, nr. Knares- borough, 4/6/61, F.E.B.	<i>Ribes sylvestre</i> (Lam.)	
	<i>Yezabura sorbi</i> Kolt (64), Birkham Wood, Knaresborough, 19/5/61, F.E.B.	<i>Sorbus aucuparia</i> Linn.	
	<i>Rhopalosiphum crataegellum</i> (Theo- bald) (64) Goldsborough Park, nr. Knaresborough, 4/6/61, F.E.B.	<i>Crataegus monogyna</i> Jacq.	

ACARI

- Epitrimerus trilobus* Nalepa. (64) Birkham Wood, Knaresborough, 10/6/61, F.E.B.; Goldsborough Park, nr. Knaresborough, 4/6/61, F.E.B.; (64) River Wharfe, Wetherby, 17/6/61, F.E.B.
- Phyllocoptus acericola* Nalepa. (64) *Acer pseudoplatanus* Linn. Birkham Wood, Knaresborough, 10/6/61, F.E.B.
- Eriophyes avellanae* Nalepa. (64) *Corylus avellana* Linn. Birkham Wood, Knaresborough, 3/10/61, F.E.B.
- E. macrorrhynchus* Nalepa. (64) *Acer pseudoplatanus* Linn. River Wharfe, Wetherby, 17/6/61 F.E.B.

BOTANY

(Miss D. R. Walker): The 1960-61 winter was very mild. There was only one fall of snow which soon cleared and—as gardeners on heavy soil know only too well—there was very little frost and the ground remained heavy and unresponsive. The mildness brought many plants into flower at very early dates: barren strawberry and winter aconite were in flower on January 1st in the Ilkley area and celandine on the 11th at Copmanthorpe. Winter aconite was in flower on Christmas Day at Catton. *Erophila verna* in flower in the Wharfedale area on February 10th was also very early. Coltsfoot and celandine are reported from several places as flowering well early in February and at Sutton-on-Derwent on February 18th, daisy, snow-drop, primrose and *Saxifraga tridactylites* were all in flower. At this period plant growth was well ahead of the normal in most areas and in the Halifax area it is reported that some rather tender plants survived the winter without protection.

From mid-March there were two or three weeks of colder weather which slowed things down a little, but all reports show that the spring flowering this year was particularly good. Garden strawberries flowered exceptionally early and the fruit was well set before the May frosts. For one or two nights the frost was then quite keen and the air drift must have been from the west as just before Whitsuntide it was noted that over a wide area the leaves on the west side of beech trees were shrivelled, whereas those on the opposite side of the trees were not affected. At Whitsuntide this was reported as occurring from Harrogate to beyond the northern county boundary and also in south-west Lakeland. There are no reports of this searing of beeches from south or east Yorkshire.

In the later spring the rainfall was slight and what little did fall was quickly dried out by the cold winds. These winds persisted all summer and at times were up to gale force, causing damage to trees, and in exposed positions in the Halifax area almost denuding some trees of leaves. The lack of sunshine in the mid-summer period retarded the flowering of some plants; but the weather suited grass and hay crops are reported as being good. In most areas the grass was cut and housed before the weather changed. Only where these operations were delayed are there reports of losses.

Warmer weather began about the middle of August. Some of the later flowering plants which had made a poor show were flourishing by September and gardens were very gay. Many early rock garden plants flowered again in autumn.

We have a report that many species of orchid did not flower very abundantly in the East Riding, the exception being the greater butterfly orchid.

We have more reports of plants vanishing through scrub clearance followed by reseeded and cattle grazing. Some formerly delightful places have vanished and botanists are finding some of their once familiar haunts now unrecognisable.

Regarding fruiting this year, strawberries were excellent as were blackberries, elders were normal, rowans very good, and hazels bore a good crop; but all reports agree that oak, beech and ash were poor. After last year's abundance, hawthorn was back to normal. Holly berries were reported as still being on the trees in May when they were again in flower.

Plant Records (C. M. Rob): The outstanding discovery of the year, and indeed for many years, is undoubtedly that of the rare orchid *Corallorhiza trifida*, found

independently in the Austwick and Ribbleshead district by Mr. J. N. Frankland and Mrs. Houseman. This notable addition to the native flora, from an area so well known and well worked in the past, was a fitting contribution to the centenary year celebrations of the Union.

The rediscovery of *Utricularia intermedia* on Strensall Common by Dr. A. Wegener is a second very important record. The last record from there was made some eighty years ago. *Wahlenbergia hederacea* was re-found in the Meltham district, at Royd Edge Clough, by Mr. Crawshaw, the President of the Milnsbridge Society. The locality was later visited by the Rev. C. E. Shaw and Messrs. Murgatroyd and Sayer, who report that there is a fair amount of the plant. It is many years since last this species was seen in V.C. 63.

Many of the other records are of considerable interest. Mr. Jukes's locality for *Arctostaphylos uva-ursi* at Slippery Stones is some distance from the well-known station on the Derbyshire border. In the Ribston-Spofforth District *Potentilla argentea* seems to have increased this year, in one place it had extended out into the field from the bank where it is normally seen, whilst still being plentiful on the bank. But in the Halifax district it is reported that *Andromeda* has now disappeared. The moorland where it formerly grew is now dried out and the conditions required for its survival are unlikely to recur. *Astragalus glycyphyllos* is fast becoming a rare plant through the destruction of suitable habitats by scrub clearance, and filling up of old quarries; it is however still in some of the remaining magnesian limestone quarries in the Smeaton district. *Orobancha minor* has turned up in two localities, but the rare *O. reticulata* has suffered from scrub clearance, both at Etchell Crags and Ripon, though a few plants survive in both places. *Geranium rotundifolium* is still in the sand-pit at Whitley Thorpe in V.C. 63, probably its most northerly locality as a native plant. The locality for *Vicia bithynica* at the edge of the car park at Runswick Bay, was so cut up by cars during the holiday that Mrs. Holloway could see no sign of the plant when she paid a second visit there in late summer. Its presence in this second Yorkshire station points to the possibility of its occurring in other places along this stretch of coast. *Alchemilla vestita* is not uncommon in the dales and upland regions but the Topcliffe record appears to be the first for the Vale of Mowbray. *A. xanthochlora* though frequent in the other Ridings is a rare plant in East Yorkshire. *Eleocharis austriaca* was seen in its only British station, also *Potamogeton alpinus* on the occasion of the well-attended Botanical Section meeting held at Buckden in July.

Reports on the occurrence of the two large-flowered bindweeds based on the work done over some four years, show that the alien *Calystegia sylvatica* is now very much more abundant than *C. sepium*, especially in the urban areas. The pink-flowered *C. pulchra* is becoming established, but generally in hedges near gardens. Pink-flowered bindweeds should be looked for and checked; the majority will doubtless be *C. pulchra* but a pink-flowered form of *C. sylvatica* is known to occur in other parts of Britain. Oxford ragwort (*Senecio squalidus*) is still spreading and has reached Todmorden, while a new type of habitat for this plant, so typical of railways, docks and waste ground, is beside the newly-made roads in some of the forestry plantations, possibly introduced with slag from tips on Tees-side where the plant is now abundant. *Chenopodium murale* is becoming fairly common in many parts, often persisting after shoddy manure has been used. *C. glaucum*, which persisted for many years on the unmetalled surface of Oxmoor Lane at Sowerby, near Thirsk, has gone since the road became the tarmac-surfaced entrance to the new sewage works. At Catton, where the plant turned up thirty years ago, probably carried in mud on car tyres, it is still fairly plentiful, although last year was not particularly good for this or any other of the established aliens.

Key to Contributors.—R. Collins, Miss E. Crackles, the Rev. P. M. Garnett, Mrs. F. Houseman, I. C. Lawrence, F. Murgatroyd, L. Magee, Miss M. M. Norman, Miss C. M. Rob, M. M. Sayer, the Rev. C. E. Shaw, Dr. W. A. Sledge and E. Thompson.

PLANT RECORDS

- Asplenium adiantum-nigrum* L. (65) Baldersdale; L.M.
A. trichomanes L. (63) Sail Bark Rocks, head of Greenfield Valley (on calcareous grit), Bridge, Phoebe Lane, Halifax; F.M.
Cystopteris fragilis (L.) Bernh. (63) Sail Bark Rocks; F.M.
Polypodium vulgare L. (61) Leavening; E.C. (63) Shaw Wood, Outlane, Huddersfield; R. Crossley.

- Fumaria capreolata* L. (62) Roadside near Swainby; C.M.R. (Det. N.Y. Sandwith).
Viola palustris L. (61) Sutton Wood; Y.N.U. Field Meeting.
Arenaria serpyllifolia L. (63) Foot of roadside wall near Overwood House about two miles from Greenfield; F.M. First record for the Mersey drainage area of West Yorks.
Astragalus glycyphyllos L. (63) Disused quarries, Little Smeaton; F.M. and M.M.S. Womersley; E.T.
Vicia bithynica (L.) L. (62) Runswick Bay; Mrs. J. Holloway. (One large plant in rough grass near car park.)
Rubus sublustris Lees. (63 or 64) Canal Bank, Esholt; R.C.
R. vestitus Weihe & Nees. (62) Moorland roadside, Silpho Moor; 1960, C.M.R.
R. echinatoides (Rogers) Sudre. (64) Adel Moor, Leeds; R.C.
R. mucronifer Sudre. (61) Sutton Wood; R.C. (All *Rubi* det. E. S. Edees.)
Potentilla palustris (L.) Scop. (63) Castleshaw Valley near Saddleworth; L. Kidd, C. E. Shaw and F.M.
Alchemilla xanthochlora Rothm. (61) Tibthorpe; M. E. Bradshaw.
A. vestita (Buser) Raunk. (62) Gallow Green, Topcliffe; C.M.R.
Ribes alpinum L. (62) Hedge near Bilsdale Hall; C.M.R.
Polygonum minus Huds. (64) Stocksbridge Reservoir, Slaidburn; A. Hitchen, per F.M.
Arctostaphylos uva-ursi (L.) Spreng. (63) Near Slippery Stones; C. Jukes.
Vaccinium intermedium Ruthe (*V. myrtillus* × *vitis-idaea*). (63) North Dean Wood, Halifax; F.M.
Euphrasia micrantha Reichb. (Det. P. F. Yeo). (65) Cautley Spout; R.C.
E. confusa Pugs. (Det. P. F. Yeo). (65) Cautley Spout; R.C.
E. brevipila Burnat & Gremli. (Det. P. F. Yeo). (64) Pen-y-ghent Gill; R.C.
Orobanche minor Sm. (64) Clover field, Collingham; D. J. Tennant. Amongst *Trifolium* Spp., Otley goods sidings; F.H.
Utricularia intermedia Hayne (62) Peaty pool, Strensall Common; Dr. A. Wegener.
Wahlenbergia hederacea (L.) Reich. (63) Royd Edge Clough, Meltham; F.M., M.M.S., C.E.S.
Lactuca virosa L. (64) Large patch, Thorparch; R.K.
Alisma lanceolata With. (61) Drain-side, Hull; B. Pashby.
Potamogeton alpinus Balb. (64) River Wharfe near Buckden; Y.N.U. Bot. Sect. Meeting.
Convallaria majalis L. (63) North Dean Wood, Halifax; Halifax Scientific Soc. Has been known in this locality since 1775 but not seen recently.
Juncus maritimus Lam. (62) Coatham Marsh; L.M.
Spiranthes spiralis (L.) Chevall (64) Still at Ledsham; P.M.G.
**Corallorhiza trifida* Chatel. (64) Ribbleshead; F.H. Austwick; J. N. Frankland.
Dactylorhiza purpurella (T. & T. A. Steph.) Vermeul. (61) Newbald Springs; E.C. (62) Grangetown and South Gare, Teesmouth; L.M.
D. fuchsii (Druce) Vermeul. × *D. purpurella*. (62) South Gare, Teesmouth; L.M. (Det. Summerhayes).
Neottia nidus-avis (L.) Reich. (62) Saltburn Woods; I.C.L.
Lemna gibba L. (63) River Went, Brocodale; F.M., M.M.S.
Scirpus tabernaemontani C. C. Gmel. (62) Small pond by side of road near the Fox and Rabbit Inn, Pickering; C.M.R.
Eleocharis quinqueflora (F. X. Hartman) Schwarz (61) Wansford; E.C.
Carex lasiocarpa Ehrh. (62) Strensall Common; Dr. A. Wegener.
C. pallescens L. (61) Lockington; E.C.
C. curta Gooden. (61) Sutton Wood; Y.N.U. Excursion, Newton-on-Derwent.
Vulpia myuros (L.) C. C. Gmel. (63) Railway siding five miles east of Thorne; W.A.S.
Catabrosa aquatica (L.) Beauv. (62) Pond near Fox and Rabbit Inn, Pickering; C.M.R.
Bromus thominii Hard. (64) Field at Scarcroft; M.M.N.
**Glyceria declinata* Bréb. (61) Allerthorpe Common; Y.N.U. Excursion.

ALIEN PLANTS (Mrs. F. Houseman)

- Lepidium divaricatum* Soland and ssp. *eckloni* (Schrad.) Thell. (64) Baildon; F.H.
L. ruderale L. (62) Garden path, Catton Hall; C.M.R.
Coronopus didymus (L.) Sm. (62) Weed in garden, Sutton under Whitsuncliff; C.M.R.

- Reseda alba* L. (62) Roadside, New Brotton; C.M.R. (64) Very fine at Knaresborough; R.K.
- Silene maritima* With. (63) Shale bank, Godley Cutting, Halifax; F.M.
- S. armeria* L. (63) Linthwaite, near Huddersfield; C.E.S. (64) Shipley; F.H.
- Polycarpon tetraphyllum* L. (64) Baildon, two plants; F.H.
- Bassia quinquecupis* F. v. Muell. (63) Kirkheaton; F.H.
- Amaranthus retroflexus* L. var. *debile*. (63) Kirkheaton; F.H.
- Chenopodium ambrosioides* L. and *C. opulifolium* Schrad. (63) Kirkheaton; F.H.
- Malva parviflora* L. (65) Riverside shingle by Swale above Langton Bridge; C.M.R.
- Lavatera plebea* Sims (64) Baildon; F.H.
- Hibiscus irionum* L. (64) Esholt; F.H.
- Salsola pestifera* A. Nels. (64) Baildon; F.H.
- Erodium malachoides* (L.) Willd. (64) Baildon; F.H.
- Trifolium cernuum* Brot. (64) Baildon; F.H.
- Medicago tribuloides* Desr. (64) Kirkheaton; F.H.
- M. hispida* Gaertner (64) Newly disturbed ground on Otley Woollen Mills old shoddy tip. This ground was used as a tip between the two wars and the seed must have lain dormant since that time.
- M. arabica* (L.) Hudson (64) With above at Otley; F.H. Near railway bridge, Copmanthorpe; Joyce Payne.
- Melilotus altissima* Thuill. (63) Tip at Dodsworth Road, Barnsley; Barnsley Naturalists.
- Onobrychis viciifolia* Scop. (63) Waste ground, Hickleton; E.T.
- Lathyrus latifolius* L. (62) Near Staithes; I.C.L. (65) Railway bank, near Tanfield; C.M.R.
- Acaena integerrima* Gill. (64) Baildon; F.H.
- Lythrum junceum* Banks & Soland. (63) Halifax; F.H.
- Oenothera laciniata* Hill (63) Linthwaite, Huddersfield; F.H. (Det. J. E. Lousley).
- Smyrniolus olusatrum* L. (62) Roadside, Pinchingthorpe; C.M.R. Recorded there in Baker's *North Yorkshire* (1863).
- Bupleurum protractum* H. & L. (64) Disused hen-run, Ben Rhydding; J.E.D.
- Petroselinum crispum* (Mill.) Nyman (62) Cliffs at Staithes; I.C.L.
- Ammi majus* L. (64) Shipley; F.H.
- Foeniculum vulgare* Mill. (63) Dodsworth Road tip, Barnsley; Barnsley Naturalists.
- Heracleum mantegazzianum* Somm. & Levier (63) Old quarry behind Salts Hospital, Saltaire; F.H.
- Euphorbia cyparissias* L. (61) Roadside, Kirkella, Hull; F. De Boer. (63) Established near old quarry, Greetland; F.M.
- E. uralensis* Fisch. ex Link (63) Canal side, Elland; F.M. and F.H. (Det. Kew).
- Polygonum plebejum* R. Br. (64) Baildon; F.H.
- Ledum groenlandicum* Oeder. (63) Naturalised by Ogden Reservoir, Halifax; F.M.
- Gaultheria shallon* Pursh. (63) By roadside near Greenfield Station; C.E.S.
- Echium plantagineum* L. (*Lycopsis*). (64) Old quarry behind Salts Hospital, Saltaire; F.H.
- Calystegia pulchra* Brummitt (61) Hedge, Old Vicarage, Burnby; Miss S. Shorer. (62) Seamer, near Stokesley; I.C.L. (63) Calder Bank Mills; D. H. Sutcliffe. (64) Esholt village; F.H. (64) Near Boston Spa; F.H. and R.K.
- Solanum sarrachoides* Sendtn. (63) Ripponden; C.E.S.
- Calceolaria chelidonioides* H.B.K. (64) Weed in garden, Otley; F.H.
- Verbascum blattaria* L. (65) Gravel workings, Great Langton; C.M.R.
- Scrophularia vernalis* L. (65) Near Bolton Hall, Wensleydale; C.M.R.
- Veronica filiformis* Sm. (64) Roadside, near Grassington and near Feizor village; F.H.
- Mentha rotundifolia* (L.) Huds. (62) Saltburn; I.C.L.
- M. niliaca* Juss. ex Jacq. (63) Near Outlane, Huddersfield; R. Crossley and F.M.
- M. × niliaca* Juss. ex Jacq. var. *alopeurooides* (Hull) Briq. (64) On the Paper Mills tip, Otley; F.H. and R.H.
- M. longifolia* (L.) Huds. var. *horridula*. With the former.
- M. × piperita* L. (63) Blackburn Valley, Halifax; F.M. (65) Swaledale; I.C.L.
- M. pulegium* L. (63) Tip at Halifax; C.E.S.
- Plantago indica* L. (63) Brighouse; R.K.
- Sambucus ebulus* L. (63) Railway embankment near Brighouse and near Emley village; E.T.

- Senecio squalidus* L. (62) Two plants by side of newly-made roads, Boltby Forest; and near Hutton Gate, Guisborough, probably carried with slag from Tees-side; C.M.R. (63) Todmorden; Mr. F. Elliman. Noticed for the first time this year.
- Anthemis tinctoria* L. (63) Quarry, Little Smeaton; F.M. and M.M.S.
- Cotula coronopifolia* L. (63) Mickleton Flash, 1960; Mrs. W. E. Grainger. Newton Ings, Fairburn; Mr. J. Morley per F.M.
- C. zeyheri* Fenzl. (63) Linthwaite, Huddersfield; Miss McCallum Webster per F.H.
- Scolymus hispanicus* L. (62) Near Fangfoss; Mrs. M. Thompson (Det. J. E. Lousley).
- Cicerbita macrophylla* (Willd.) Wallr. (61) Goodmanham in two places; C.M.R.
- Juncus pallidus* R. Br. (64) Baildon; Miss M. Kilby (Det. J. E. Lousley).
- J. tenuis* Willd. (63) Canal Bank, Marsden; R. Crossley.
- Allium moly* L. (61) Near Fangfoss; Mrs. M. Thompson.
- Lolium temulentum* L. (63) Dodsworth Road tip, Barnsley; Barnsley Naturalists.
- Bromus inermis* Leyss. (64) Baildon; F.H.
- B. arvensis* L. (63) Greetland; F.H.
- Stipa reevora* Trin. (63) Kirkheaton; Miss M. McCallum Webster per F.H.
- Phalaris paradoxa* L. var. *praemorsa* Coss. & Dur. (63) Kirkheaton; F.H.
- Oryzopsis miliacea* (L.) Benth. & Hook. (64) Baildon, 1960; M. McW. per F.H.
- Setaria italica* (L.) Beauv. (63) Dodsworth Road tip, Barnsley; Barnsley Naturalists.
- Schismus barbatus* (L.) Thell. (64) Baildon; F.H. (Det. J. E. Lousley).

Bryology (G. A. Shaw): Apart from our usual two meetings during the year, 1961 has seen little bryological activity, although Miss Dalby continues her investigations on the bryophytes of Ilkley Moor, and has turned up several interesting things. The Spring Meeting at Skipwith was rather disappointing, though we did locate the two rare Dicranums, *D. rugosum* and *D. bergeri*. The Malham Meeting in September was quite useful and we saw some of the more uncommon bryophytes of that rich district, including *Orthothecium rufescens* and *Cinclidium stygium*. It is pleasing to note that *Zygodon gracilis* is still plentiful at the head of Heselden Gill.

The following are among the more interesting records of the year:

- Sphagnum russowii* Warnst. (64) Ilkley Moor; Miss M. Dalby. New to V.C. 64.
- Dicranum strictum* Schleich. (64) On a fallen tree, Birkham Wood, near Knaresborough; F. E. Branson. This is about 1½ miles from the Plumpton locality.
- Philonotis capillaris* Lindb. (64) Swinsty Reservoir; Miss M. Dalby. This is a most interesting record and is the second for V.C. 64.
- Brachythecium glareosum* (Bruch) B. & S. (64) Menston; Miss M. Dalby.
- Hygroamblystegium fluviatile* (Hedw.) Loeske (64) Denton; Miss M. Dalby.
- Campylium elodes* (Spruce) Broth. (64) Malham Tarn Fen; M. C. F. Proctor (confirming an old record of 1896 by H. N. Dixon).
- Hypnum patientiae* Lindb. (64) Lindley Reservoir; Miss M. Dalby.
- Riccia fluitans* L. (62) Disused brick pit between Strensall and Sheriff Hutton; D. H. Adams. (62) Found in small quantity in 1958 in a pond by the York-Malton road; D. H. Adams.
- Ricciocarpus natans* (L.) Corda (62) Disused brick pit between Strensall and Sheriff Hutton; D. H. Adams. Strensall Common; Dr. A. Wegener.
- Blasia pusilla* L. (64) Burley Moor; Miss M. Dalby; still plentiful at Bramham Park; G. A. Shaw.
- Calypogeia muelleriana* (Schiffn.) K. Mull. (64) Malham Tarn Moss; Miss M. Dalby.
- Lophozia incisa* (Schrad.) Dum. (64) Malham Tarn Moss; Miss M. Dalby.
- Solenostoma sphaerocarpum* (Hook.) Steph. (64) Ilkley Moor; Miss M. Dalby.
- Chiloscyphus polyanthos* (L.) Corda var. *rivularis* (Schrad.) Nees. (64) Burley-in-Wharfedale; Miss M. Dalby.
- Odontoschisma sphagni* (Dicks.) Dum. (64) Malham Tarn Moss; Miss M. Dalby.
- Scapania irrigua* (Nees.) Dum. (64) Ilkley Moor; Miss M. Dalby.
- Reboulia hemisphaerica* (L.) Raddi (62) Levisham; A. J. Wallis. Apparently only the second record for V.C. 62. (64) Dunning Cliff, Slaidburn; G. A. Shaw.

Mycology (R. Watling): The mycological year has been mixed due to the rather erratic weather. Thus in the spring large numbers of agarics were found (e.g. 32 different species were met with on the spring foray) whereas poor early autumn collecting suggested a rather late season. *Oudemansiella Collybia platyphylla*, the herald of the season of larger fungi, was still to be seen growing vigorously in late September. Both from conversation and local reports it appears that there was in the East Riding and north-east part of the county a flush of agarics in the middle

YORKSHIRE

INCOME AND
Year ending

1960		INCOME								
£	s	d.						£	s.	d.
548	17	6	Subscriptions	...	...	...	...	550	12	0
15	0	8	Sale of Mycological Reprints	...	...	...	...	8	15	6
4	0	6	Sale of other Publications	...	...	...	...	4	14	9
21	7	6	Interest on Investments	...	...	...	...	21	7	6
18	15	10	Bank Interest	...	...	...	...	32	5	7
36	4	3	Donations and Tax thereon	...	...	...	...	45	6	9
57	8	3	Tax on Covenanted Subscriptions	...	...	...	...	28	0	10
<hr/>								<hr/>		
£701 14 6								£691 2 11		
<hr/>								<hr/>		

BALANCE SHEET

1960								£		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		
<hr/>								<hr/>		550 0 0			
550	0	0											
MYCOLOGICAL FUND:													
Balance brought forward								10	5	10			
10	5	10	Sales of Cortinarius	...	...	...	...	19	12	3		
<hr/>								<hr/>		29 18 1			
ORNITHOLOGICAL FUND:													
Balance brought forward								100	0	0			
Donations								26	0	0			
Interest on Investment								3	0	0			
<hr/>								<hr/>		129 0 0			
Less Expenditure								29	0	0			
100	0	0											
LIFE MEMBERS' ACCOUNT:													
Balance brought forward								150	0	0			
New Life Member								15	15	0			
<hr/>								<hr/>		165 15 0			
Less Transfer to Subscriptions...								16	0	0			
150	0	0											
150	0	0	Reserve for Contingencies	...	...	...	...	150	0	0		
155	19	6	Sundry Credit Balances	...	...	...	...	41	4	4		
15	15	0	Suspense Account	...	...	...	...	15	15	0		
INCOME AND EXPENDITURE ACCOUNT:													
Balance brought forward								222	10	1			
Add Excess of Income over Expenditure								91	6	11			
<hr/>								<hr/>		313 17 0			
222	10	1											
<hr/>								<hr/>		£1354 10 5			
<hr/>								<hr/>		£1350 9 5			
<hr/>								<hr/>		<hr/>			

NATURALISTS' UNION

EXPENDITURE ACCOUNT

October 31, 1961

1960		EXPENDITURE			
£	s. d.			£	s. d.
		GENERAL PRINTING:			
30	12 0	Members' Cards	...	30	7 2
69	2 9	Circulars	...	45	0 8
					75 7 10
		<i>The Naturalist:</i>			
438	10 0	Members' and Exchange Copies	...	464	17 2
12	6 3	Extra Pages and Illustrations	...	14	7 5
3	14 6	Editor's Expenses	...	7	6 6
					486 11 1
20	5 1	Officers' Expenses	...		23 18 7
15	11 5	Sundry Expenses	...		13 18 6
60	0 0	Depreciation of Investments	...		—
51	12 6	Excess Income over Expenditure	...		91 6 11
					£691 2 11
£701	14 6				

October 31, 1961

1960					
£	s. d.			£	s. d.
		INVESTMENTS (Nominal Value):			
		Booth Fund—3½% Conversion Stock	...	100	0 0
		Cheesman Fund—3½% War Stock	...	100	0 0
		Nicholas Fund—3% British Transport	...	100	0 0
		General Fund—4% Consols (Bank of England)	...	200	0 0
		„ „ 4% Consols (P.O.)	...	159	10 11
					659 10 11
		Less Reserve for Depreciation	...	235	0 0
424	10 11				424 10 11
		DEPOSIT ACCOUNT:			
		York County Savings Bank	...	765	10 10
		Add Interest accrued	...	30	18 3
614	3 6				796 9 1
		CURRENT ACCOUNT:			
305	15 11	Westminster Bank	...		95 12 1
9	5 0	Sundry Debit Balances	...		33 17 4
0	15 1	Cash in Hand	...		—

£1354 10 5

£1350 9 5

YORKSHIRE

INCOME AND
Year ending

1960		INCOME		1960	
£	s. d.	£	s. d.	£	s. d.
548	17 6	Subscriptions	550	12 0	
15	0 8	Sale of Mycological Reprints	8	15 6	
4	0 6	Sale of other Publications	4	14 9	
21	7 6	Interest on Investments	21	7 6	
18	15 10	Bank Interest	32	5 7	
36	4 3	Donations and Tax thereon	45	6 9	
57	8 3	Tax on Covenanted Subscriptions	28	0 10	
<hr/>				<hr/>	
£701	14 6		£694	2 11	
<hr/>				<hr/>	

BALANCE SHEET

1960		1960		1960	
£	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	
<hr/>				<hr/>	
550	0 0		550	0 0	
MYCOLOGICAL FUNDS:					
		Balance brought forward	10	5 10	
10	5 10	Sales of Cortinarius	19	12 3	
<hr/>				<hr/>	
			29	18 1	
ORNBITHOLOGICAL FUNDS:					
		Balance brought forward	100	0 0	
		Donations	26	0 0	
		Interest on Investment	3	0 0	
<hr/>				<hr/>	
		Less Expenditure	129	0 0	
<hr/>				<hr/>	
100	0 0		29	0 0	
<hr/>				<hr/>	
			100	0 0	
LIFE MEMBERS' ACCOUNT:					
		Balance brought forward	150	0 0	
		New Life Member	15	15 0	
<hr/>				<hr/>	
			165	15 0	
<hr/>				<hr/>	
150	0 0	Less Transfer to Subscriptions	16	0 0	
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150	0 0	Reserve for Contingencies	150	0 0	
150	19 6	Sundry Credit Balances	41	4 4	
15	15 0	Suspense Account	15	15 0	
<hr/>				<hr/>	
222	10 1		222	10 1	
<hr/>				<hr/>	
		Add Excess of Income over Expenditure	91	6 11	
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£1354	10 5		£1350	9 5	
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The Naturalist

NATURALISTS' UNION

EXPENDITURE ACCOUNT
October 31, 1961

1960		EXPENDITURE		1960	
£	s. d.	£	s. d.	£	s. d.
39	12 0	GENERAL PRINTING:			
69	2 0	Members' Cards	30	7 2	
		Circulars	45	0 8	
<hr/>				<hr/>	
				75	7 10
The Naturalist:					
138	10 0	Members' and Exchange Copies	464	17 2	
12	6 3	Extra Pages and Illustrations	14	7 5	
3	14 6	Editor's Expenses	7	6 6	
<hr/>				<hr/>	
20	5 1	Officers' Expenses	480	11 1	
15	11 5	Sundry Expenses	23	18 7	
60	0 0	Depreciation of Investments	13	18 6	
31	12 6	Excess Income over Expenditure			91 6 11
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1	14 6				£691 2 11
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October 31, 1961

1960		1960		1960	
£	s. d.	£	s. d.	£	s. d.
INVESTMENTS (Nominal Value):					
		Booth Fund—3½% Conversion Stock	100	0 0	
		Cheesman Fund—3½% War Stock	100	0 0	
		Nicholas Fund—3% British Transport	100	0 0	
		General Fund—4% Consols (Bank of England)	200	0 0	
		" " " " 4% Consols (P.O.)	150	10 11	
<hr/>				<hr/>	
			650	10 11	
<hr/>				<hr/>	
60	11	Less Reserve for Depreciation	235	0 0	
<hr/>				<hr/>	
					424 10 11
DEPOSIT ACCOUNT:					
		York County Savings Bank	765	10 10	
		Add Interest accrued	30	18 3	
<hr/>				<hr/>	
					796 9 1
CURRENT ACCOUNT:					
		Westminster Bank			95 12 1
		Sundry Debit Balances			33 17 4
		Cash in Hand			—
<hr/>				<hr/>	
1354	10 5				1350 9 5
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1962 January-March

and late part of August. This was then followed by a sudden fall off to leave collecting early in September in these same areas almost worthless. Thus I found familiar areas about Scarborough quite bare when at the same time last year a long list had resulted from a few days' collecting. The season improved markedly in October until the cold winds dried up the fruit bodies or, accompanied by driving rain, ruined their characteristics. *Agaricus*, a taxonomically difficult genus and rarely taken on our forays, played an important part in the collecting basket this year, and meals of wild mushrooms have been plentiful. Other fungi which also seemed to benefit by the weather conditions in the late summer and early autumn were members of the families Coprinaceae and Bolbitiaceae. In the latter group about 100 gatherings were made in a fortnight of collecting, less than two-thirds of this number being replicates.

As usual two forays were held by the Mycological Committee and foray lists and accounts will be published separately. The spring foray was held at Grassington; the autumn one at York. Both were successful and well supported and at the autumn foray we were pleased to welcome Miss G. Waterhouse, President of the British Mycological Society, and Dr. Barrett for Cambridge. The retiring chairman Dr. Pauline Watson, gave an admirable address on fungi parasitic on other fungi with observations from her own experimental research. Mr. R. Watling, Royal Botanic Gardens, Edinburgh, succeeds her for the coming year.

The death of Dr. Hincks has been a great loss to the committee. His jovial friendliness and encouragement to both young and old will be hard to replace. The meeting at York paid homage to a friend and past chairman in the traditional manner.

At the Malham Field Centre a former chairman of the committee, Mr. P. D. Orton, ran a one-week course on the larger fungi in September. Ten persons attended, many of whom were extremely keen, and were taught the procedure of examining, describing and painting toadstools. However, it took Mr. Orton and the writer a considerable time to collect enough material of even the common toadstools to illustrate the different and representative groups.

In order to give as full a picture as possible of the fungi, both large and small, correspondence would be appreciated from all interested mycologists. A more complete compilation is aimed at for the annual report, and this depends on the help of all those interested.

Animals of the Wild, by Marcelle Vérité. Pp. 94, illustrated in colour by Romain Simon. Oliver & Boyd, Edinburgh, 1961. 17/6.

It is a pity to see this work from a publishing house which has recently distinguished itself by the publication of many valid, important and well-produced works of natural history. The volume under review is well produced and, for the price, would be a very good bargain but, despite the author's name, it contains so many factual errors that it cannot be commended.

Obviously intended for children, it comprises a series of illustrated topics such as 'Dwellers in Odd Corners', 'Workers in the Garden', etc. I have no quarrel with the illustrations but the text is another matter. Perhaps it has suffered under translation, although this is not mentioned on the title-page, but this cannot account for all the wild mis-statement. Thus of a penguin colony 'there are swarms of gulls—the fierce skua, the cormorants, the sacred ibis, the terns—waiting until their backs are turned for a moment. A baby penguin is a tempting mouthful for these hungry beaks'. The magpie is said to build dummy nests to mislead the opposition, the hedge-sparrow sometimes to appropriate swallows' nests and to be walled up in retribution. Generic names are used throughout without a capital letter. Quite recognisable drawings are sometimes misidentified, as for example, a Great Tit which is captioned Blue Tit and the illustration treated as *Cisticola juncidis* appears to be the Indian *Orthotomus*.

All this is a great pity and I should like to welcome another issue of what could be a useful appetite-whetter for children if its text were stringently revised.

A.H.

Obituary

WALTER DOUGLAS HINCKS, D.Sc., F.R.E.S.
1906-1961

DR. WALTER DOUGLAS HINCKS died at Heaton Norris, Stockport, on July 12th, 1961, following an illness of some months' duration. He was born at Melton Mowbray, Leicestershire, on September 3rd, 1906, being the only child of Mr. and Mrs. Walter J. Hincks. His father was an official of a Life Assurance Company and also an artist of considerable talent and it was from him that Douglas Hincks evidently inherited that artistic ability which enabled him to produce such fine drawings of insects.

His childhood was spent at Melton Mowbray and Doncaster; then in 1918 the family moved to Leeds where he attended the Leeds Boys' Modern School and where began the friendship with the writer of this memoir which lasted for the rest of his life. His interest in natural history began at school, stimulated by the influence of that great Leeds teacher of natural history, J. Digby Firth, happily still with us at the age of 84, and to whom so many naturalists owe so much.

Having decided on pharmacy as a career, on leaving school in 1923 he entered into articles of apprenticeship with Messrs. C. F. Thackery & Co., Ltd., Wholesale and Retail Chemists, Leeds. He duly attended The Leeds College of Pharmacy and passed the examinations necessary for election to membership of the Pharmaceutical Society. Remaining in the employ of Messrs. Thackery for twenty-four years, he was for eighteen years manager of one of the wholesale departments.

Once qualified professionally he was able to devote the whole of his spare time to the study of insects generally and in particular to the Coleoptera which became, and remained for some years, his favourite group. Douglas Hincks was first and foremost a systematist and taxonomist and was never happier or more competent than when naming and getting into order series of insects. At first only British insects interested him, but on getting to know the late E. C. Horrell of Leeds, an entomologist with an extensive collection of foreign coleoptera, the greater part of which he eventually acquired, he began to take an interest in foreign species, especially at first in the Passalidae and various papers on this group appeared, some written in conjunction with J. R. Dibb. With the progress of years his output of papers grew, not only on the Coleoptera but also on Diptera, Orthoptera and later Hymenoptera.

Simultaneously with this work he was a very active member of the Leeds Naturalists' Club, the Yorkshire Naturalists' Union (President 1945) and other kindred societies in and around Yorkshire; a Founder Member of the Yorkshire Naturalists' Trust and also for some time honorary curator of entomology at the Yorkshire Museum, York, where he rearranged the coleoptera collection. Joining the Royal Entomological Society in 1930 he served on the Council (1952-55) and was a Vice-President in 1955. He was a member and Past President of the Society for British Entomology and a member of the Council of the British Trust for Entomology.

Most of his scanty leisure during the war years was taken up with the compilation, in conjunction with G. S. Kloet of Manchester, of the *Check List of British Insects* which was published in 1945.

In 1932, Douglas Hincks married Jessie, the only daughter of Dr. R. H. Hargrave, A.R.C.O., of Leeds, and in her he found a partner fully sympathetic to his interests and gracious and hospitable to his many entomological friends.

In 1947 he was offered and accepted the position of Curator of Entomology at the Manchester Museum. Here was the job after his own heart into which he quickly and happily settled and he always acknowledged with gratitude the help and kindness he received on his arrival in Manchester, especially from Professor Cannon and from the Keeper of the Manchester Museum and his colleagues in the various departments.

Once settled, papers on various orders of insects appeared frequently. In addition he wrote the handbook of the British Orthoptera for the Royal Entomological Society's *Handbooks for the Identification of British Insects* series, accepted the editorship of the *Catalogus Coleoptorum*, edited *Horned Beetles*, G. C. Arrow's study of the fantastic in nature and commenced what was to be his *magnum opus*, the four volumned *Monograph of the Dermaptera of the World*, Volume 1 of which appeared in 1955, and Volume 2 in 1959.

In 1951, Douglas Hincks was awarded the degree of Master of Science by the University of Manchester, proceeding to that of Doctor of Science in 1954.

He was not merely a systematist working with microscope and specimens in a museum; he was also an indefatigable collector in the field. Many are the collecting

holidays that he and the writer have had together and odd days of collecting together may be numbered, over forty years, by the hundred. Always a cheery and courteous companion, sharing his captures when necessary and gratefully receiving specimens when his own collecting luck was out. A man of great physical strength, he could until quite recently collect strenuously all day and then sit up until the early hours of the next morning mounting his captures.

At all field meetings—and, whenever possible, he attended the field meetings of the various societies to which he belonged—he would always give up some of his time to give help and guidance to any who were present and beginning to take an interest in entomology. Such were always encouraged to write to him for advice on the literature of the group in which they were interested and to send specimens for identification in case of difficulties. His firm belief was, that as he had, years before, received from others, so must he now do for others just beginning their entomological studies. The writer could name at least a score of entomologists, professional and amateur, who received their early inspiration and guidance from Douglas Hincks.

He had correspondents in most countries of the world; individuals sent him specimens by the hundred, and museums everywhere sought and were grateful for, the help he was able to give them. If he had a fault it was that he took on too many things at one and the same time and did not always seem capable of finishing one urgent work before commencing on something else. Who is there who can now complete the two outstanding volumes of the *Monograph of the Dermoptera of the World* or guide the *Check List of British Insects* to its contemplated and more accurate second edition?

An entomologist whose reputation was world-wide has passed on, and we who have known him for many years have lost a great friend whose erudition we have all admired and whose example in his consideration for the welfare of junior entomologists at all times, we would do well to emulate at every opportunity.

The funeral took place at Mirfield Parish Church on Friday, July 14th, followed by cremation at Lawnswood, Leeds. Many naturalists were present at the services. To his wife we offer our deepest sympathy. T.B.K.

LT.-COL. H. G. BROWNLOW, R.E.

To our regret we have to record that Guy Brownlow died in his sleep at his Suffolk home in late September.

Born into a military family, after leaving Cheltenham College, H. G. Brownlow went as a cadet to Woolwich Academy. His army service included a period at Spurn as a subaltern, and extended to Singapore, Germany and Egypt. He was mentioned in despatches during the 1939-45 war. After his retirement in 1950 most of his time was used ornithologically.

The writer first met Guy Brownlow in 1946 when he was at the Ripon School of Military Engineering. He joined the Y.N.U. in 1947 and told me he had become a life member because ornithology in the Y.N.U. had impressed him so favourably, and because he was being transferred to Egypt. Here he started a ring-trap and ringed many birds which 'probably bred behind the iron curtain.' Back in England in 1950 he was again a frequent and active visitor to Spurn, becoming a member of the committee and being particularly helpful with trap-building and repairing, and with clerical work. Other observatories visited included Fair Isle. He was interested in weights and measurements of birds and in the information thereby derivable. In 1961, Col. Brownlow became Chairman of the Joint Meetings of the Vertebrate Zoology Sections. Nationally he worked with and for the B.T.O., collaborating with P. A. D. Hollom in 'Trapping Methods for Bird Ringers.' Much time was also put in with and for the R.S.P.B. When the new breeding-grounds of the Avocet were flooded, his energy and engineering skill enabled drainage in time for the Avocet's return; he also took part in the sustained watches over Ospreys in Inverness-shire. At the time of his death he was planning a visit to Heligoland, and he was hoping to visit America in 1962.

Guy Brownlow had no enemies, was respected by all, and loved by many. His cheery personality, no less than the help he gave so generously, will be missed by old and young. Guy's sister, Mrs. Woodhouse, writes: 'he loved all his work in connection with the Y.N.U. and bird-watching generally, and all the friends he made; and it is comforting to know that they were fond of him and will miss him.'

R.C.

BOOK REVIEWS

Studies in Paleobotany, by **Henry N. Andrews**. Pp. xii + 487 with 181 illustrations. John Wiley & Sons Inc., New York and London, 1961. 94/-.

This text-book of fossil botany is intended for the use of undergraduates and its content is certainly well adapted to the needs of its intended readers, though its high price will probably put it beyond the means of all but a few. Much recent information only otherwise available in original papers has been incorporated; the numerous illustrations, several of them not previously published, are a valuable addition to the text, and the reader's interest cannot fail to be quickened by the inclusion of several chapters devoted to discussions of problems which hinge for their solution upon discoveries in fossil botany. These special chapters deal with early Angiosperms, Tertiary floras of Europe and western U.S.A., heterospory and the evolution of the seed, Arctic and Antarctic fossil floras, and the geographical distribution of Palaeozoic and Mesozoic floras. There is also a chapter on palynology contributed by C. J. Felix. The morphology and anatomy of the chief plant groups are described in sufficient detail for the needs of students and the up-to-date references at the end of each chapter make the book also useful to the advanced student. But paleobotany forms a small part of the botany curriculum in most British Universities. It is usually included within the courses on Pteridophyta and Gymnosperms. Very few students therefore can be expected to pay so high a price for a work which covers so small a part of their studies. The library copy, however, is sure to be in demand for readability is one of the many merits of this book.

W.A.S.

Flora of the Santa Cruz Mountains of California, by **John Hunter Thomas**. Pp. vi + 434 with 10 photographic illustrations and 250 drawings. Stanford University Press. London: Oxford University Press, 1961. 68/-.

The area covered by this flora is approximately equal to that of Cornwall. The highest point in this coastal range is 3,806 feet above sea-level; small lakes are numerous and rivers, streams and creeks are plentiful. The Mediterranean-type climate and varied topography give a rich flora with a wide diversity of plant communities. These include coastal strand and salt marshes, freshwater marshes, coastal scrub, redwood and mixed evergreen woodland, chaparral and grassland. Yet here as in so many other regions the native flora is constantly contracting and there is a depressingly familiar ring about such statements as 'Many areas bear little resemblance to what they were' . . . 'Permanent conservation measures are desperately needed . . . the rate of disturbance is increasing at an accelerated rate' . . . 'Disturbed areas now support a flora composed almost entirely of alien plants.'

The text consists of keys to the families, genera and species of all vascular plants represented, with habitat, flowering time and distribution data for each species but no descriptions. The taxa covered total 1,799 of which 30 per cent. are introductions. Any botanist fortunate enough to visit this area should certainly acquire a copy of this flora. The printing and production and the elegant drawings all combine to make it a book which gives pleasure in the handling quite apart from its obvious taxonomic value.

W.A.S.

Look to the Wilderness, by **W. Douglas Burden**. Pp. xx + 251 with 16 photographic plates. Hutchinson, 1961. 30/-.

Mr. Burden is an adventurer and a romantic as well as a naturalist. He has an insatiable appetite for the lonely, unspoilt places of the world. His greatest pleasure lies in the forests and mountains and the animals which live there and the rarer his quarry and the more outlandish its haunts the more powerful its appeal to him. In this book he tells of hunting trips in Canada and Alaska, in the jungles of Indo-China, the Sunda Isles and Nicaragua, and in the mountains of Kashmir and the Sino-Mongolian frontier. His search for a lost silver mine in the jungles of Central America is perhaps the most formidable, and the capturing of the giant carnivorous lizard of Komoda Island perhaps the most spectacular of his adventures.

The author is now a Director of the American Museum of Natural History and although the experiences here recounted all took place between thirty-five and forty years ago, he is remarkably successful in writing vividly about them.

W.A.S.

The Moths of the British Isles, by **Richard South**. Fourth edition. Volume I, pp. 432 with 98 plates in colour and 58 plates in black and white; volume 2, pp. 368 with 69 plates in colour and 70 in black and white. *Wayside and Woodland* series. Warne, 1961. 35/- each.

For this edition, volume 1 has been revised by H. M. Edelsten and D. S. Fletcher and volume 2 by these and R. J. Collins. Whilst much of the text is exactly as in South's original publications of 1907 and 1908, the opportunity has been taken to bring up-to-date some information regarding distribution, new residents and occasional visitors. And, of course, there are the inevitable changes in nomenclature! We could make a number of comments upon the Yorkshire occurrences which are quoted, but it must be remembered that any discrepancies are due to our failure to publish a comprehensive list since Porritt's Supplement of 1903.

At first sight the new plates, by the late H. D. Swain, seem much too garish, yet the fact is that the familiar plates of previous impressions were often too quiet in comparison with actual specimens. With use the fresh plates will be more pleasing to use.

Four plates of 'Pug' moths are shewn double size, which is a great improvement as some of the old plates were quite useless for some 'Pugs'. One or two minor errors are to be found; for instance, seven references to plate 48 in volume 2 should read plate 49. The transposition of the names of the Broom-Tip and the Streak on plate 75 in the same volume is much more serious. Nevertheless, 'South' is as worth-while and essential as it has been for the past half-century.

F.H.

The Ciliated Protozoa: Characterization, Classification and Guide to the Literature, by **John O. Corliss**. Pp. 310. Pergamon Press Ltd., 1961. 80/-.

Like its predecessors in Pergamon's International Series of Monographs in Pure and Applied Biology this book is not one for the beginner; but for the reader already possessing some knowledge of the ciliates it provides a compact and up-to-date account of the systematics of this well-known but poorly understood group.

The book comprises three sections reflecting the three principal aims of the author. Firstly, a revised classification of the ciliates is presented, based mainly on the results of recent research on the infraciliatures and on morphogenesis, and incorporating modern views of ciliate ontogenies and structural homologies. The distinguishing features of the major taxa are described and their relationships and phylogenies discussed. Secondly, the 129 ciliate families are systematically arranged together with their diagnostic characters and an annotated list of all their known genera. Finally, from the very extensive literature on ciliates the author has selected and catalogued 1,700 major works on all aspects of their taxonomy and biology.

The new classification bears an unfamiliar look—for example the Holotricha and Spirotricha become the only sub-classes, and the Chonotricha, Peritricha and Suctorina are transferred as orders to the Holotricha—but all changes are well substantiated and, in some cases at least, appear long overdue. This excellent volume, with its 22 plates incorporating over 100 figures, will be indispensable to all students of the ciliates both for the factual material it contains and for the stimulating nature of its ideas.

R.W.O.

Land Invertebrates, by **J. L. Cloudsley-Thompson** and **J. Sankey**. Methuen, 1961. 16/-.

This book is intended to serve as a field-study guide to all the groups of terrestrial invertebrates, apart from insects, for sixth form and first year University students. It will be useful as an introduction for more advanced University students as well, since much information which has hitherto been available only in scattered form and in technical publications has here been brought together for the first time in a compact little volume of 150 pages. An adequate account of the chief structural and biological features of each group is followed by brief descriptions and notes on the commonest species. Thus, for example, the 12 most common of the 25 Lumbricid worms in this country are described. The illustrations are, for the most part, good and adequate but some of the figures on page 20 are inaccurate and poorly done. One chapter is devoted to mites, but one of the commonest and largest of mites living on trees, the predaceous *Anystis* is not even mentioned.

E.B.

The Ecology and Life History of the Common Frog, by R. Maxwell Savage. Pp. vii + 221 with 47 text figures. Sir Isaac Pitman & Sons Ltd., 1961. 25/-.

This book is an account of the research, carried out by the author as a recreation, on the ecology of the common frog. It covers all stages of the life history—egg, tadpole, juvenile and adult frogs—and much information is brought together on parasites, distribution and breeding behaviour. The section on the relation between spawning dates and weather in chapter 8 is new and of great interest, and a full account of the method used and of other statistical methods in chapter 10 adds considerably to the value of the book.

The book is written in a chatty and enthusiastic style. The author's work is recorded in great detail and with a wealth of comment and discussion, but the book would have been improved by a better balance. The work of others is mentioned but never in the detail accorded to the author's own papers, and very often the comment and discussion on some of the factual material presented is excessive, much space being given in some places to pure conjecture as, for instance, on pp. 79 *et seq.* where density dependence is discussed. E.B.

Mammals of the World, by Hans Hwass translated by Gwynne Vevers. Pp. 212 with over 250 full colour illustrations by Wilhelm Eigener. Methuen & Co Ltd., London, 1961. 16/-.

An attractive guide and introduction to a great number of mammals which should serve to whet the appetite of laymen and young naturalists alike. Faulty proof-reading causes one to pause on p. 8 ('except' for 'expect') also reversed captions to illustrations on p. 182 and the statement that the ferret is an 'albino domesticated form of the polecat'; but this is, nevertheless, a book well worthy of recommendation. Its illustrations are very pleasing and the book most helpful to the beginner. E.H.

Beasts of the North Country, by Henry Tegner. Pp. 144, 7 photographs, line drawings. Galley Press, London, 1961. 25/-.

The North Country, in this particular context, means the counties of Northumberland and Durham. The author's account is a mainly personal one of his experiences with the mammals, wild and feral, of the area. It contains little that is new but does convey the author's zest for outdoor activity. It is a pity that he occasionally wanders from personal experience into error. He says, for instance, that the 'blue hare changes the colour of his coat biannually' whereas the animal has three pelages within the year. He cites the Jersey shrew as an island race of the common species although in fact it is even generically different. There is a useful chapter on Museums and the Field Naturalist. E.H.

Topsy and Turvy, My Two Otters, by Ernest G. Neal. Pp. 72, 24 photographs. Heinemann, London, 1961. 10/6.

This is an account of the rearing of two orphaned otter cubs, at first by the author and latterly by H. G. Hurrell of Pine Marten fame. The female of the pair died at about eight weeks from a perforated duodenal ulcer but the male and a later companion lived on to escape to the wild as mature animals. The author retails the problems, first of providing a suitable diet and then of acting as tutor to the young animals in such matters as learning to swim, a very otterly accomplishment which after thousands of years of evolution still comes, not as an innate faculty but as a process of learning from parental instruction.

On the whole, a rather slender half-guinea's worth.

E.H.

The Birds of Trinidad and Tobago, by G. A. C. Herklots. Pp. 287 with 16 colour plates, 4 black and white plates and 14 text figures. Collins, London, 1961. 42/-.

This excellent handbook is a 'must' for any birdwatcher either resident on or visiting Trinidad or Tobago as well as to others in Venezuela, the Guianas and northern Brazil. Over 400 species are described, the book is well set out, and includes a useful glossary whilst the illustrations should prove very helpful. This is a most valuable contribution to the recorded natural history of the islands.

E.H.

Living Free, by Joy Adamson. Pp. 146 with 10 colour and numerous black and white photographs. Collins, Harvill, 1961. 25/-.

This book is an enthralling sequel to *Born Free* in which we were introduced to Elsa the lioness. Elsa, living free, mated with a wild lion so that we now have the great pleasure of meeting her family, two sons and a daughter, in their native home. It is the story of happy family life shared by the lions and Joy and George Adamson and of the relationship between the lions and other wild creatures, but attention is called to the threat to the wild life of Africa by unfriendly human intervention. Such a fascinating and well-written story makes an undeniable appeal to all who love animals.

E.H.

Field Studies, Vol. 1, No. 3, July 1961. Obtainable from the Secretary, F.S.C., 9 Devereux Court, Strand, London, W.C.2. 10/-.

The third part of the journal of the Field Studies Council contains six papers. Dr. Lund's paper on 'The Algae of the Malham Tarn District' is an important addition to the three articles dealing with the natural history of this area which appeared in the two previous issues. The district is as rich and varied in its algal flora as in its bryophytes and flowering plants and it is therefore particularly valuable to have this account of the terrestrial and aquatic algae contributed by the foremost British algologist. Visitors to the Flatford Mill Centre will find C. L. Hopkins' 'Key to the Water Mites (Hydracarina) of the Flatford Area' of great assistance in identifying these small animals and its utility will not be confined to the area with which it is specially concerned. The Dale Fort Centre is represented by an article on 'The Flowering Plants and Ferns of Dale, Pembrokeshire' by Martin George, and one on 'A Biologically-defined Exposure Scale for the Comparative Description of Rocky Shores' by W. J. Ballantine. The latter, though based on work done at Dale Fort will be of general application in work on marine ecology. The other articles are 'A Study of Settlement Patterns' by E. M. Yates, the area studied being in Surrey, and 'The Devonian System in South Devonshire' by D. L. Dineley. The articles are all illustrated by plates, drawings or maps.

Nature in Camera, by Václav Jírů. Pp. 172, consisting of 150 monochrome and 7 colour photographs. Spring Books, London. 25/-.

In this collection of photographs, the camera has been effectively used both as an expression and as an extension of its user's observation and appreciation of natural objects. The subjects chosen are familiar insects and flowers photographed in their natural surroundings, the insect studies being obtained without recourse to anaesthesia of the subjects. The photographs are intended to speak for themselves, and, indeed, this intention is emphasised, for whatever textual commentary is provided is usually interpolated after the group of photographs to which it is relevant. It is true that the few colour photographs are less than impressive, but this is not important. The heart of this book lies in the monochrome pictures, which include many excellent studies, and as a whole constitute a remarkable volume, one which is recommended to all interested in the art of nature photography. Photographers interested in practical matters should note that no technical information is provided concerning the photographs in this book. The reproduction, however, is excellent.

J.D.L.

New Photograms 1962: A Selection of the World's Finest Photographs. Edited by Charles Johnson and published for *Amateur Photographer* on October 31st, 1961, by Iliffe & Sons Ltd. Pp. 136 including 104 plates, 8 in full colour. $10\frac{3}{4} \times 8\frac{1}{2}$. 21/- net (by post 23/3).

The current edition of *Photograms* provides the customary wide range of pictures, the quality and techniques of which should satisfy the tastes of most photographers and arouse the critical interest of all. Many of the pictures combine technical perfection with great subject charm; some have a strong emotional impact and—inevitably—there are the few which are photographic stunts of dubious artistic merit. The justification for the inclusion of these is obscure though their bizarre quality serves to enhance the satisfaction afforded by the others. Fifteen of the photographers whose work is included in this collection contribute their views on photography and there is the usual commentary on each of the plates.

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OBSERVATIONS ON THE FEEDING HABITS OF BIRDS AT COASTAL SEWER OUTLETS

T. M. CLEGG

Sewage-farms have been regarded as important inland bird habitats for about half a century but very little has been published on the ecology of the birds which frequent them. Boyd (1957) gives a summary of the way in which sewage-farm watching has developed and mentions numerous species of birds which owe their places on the regional lists to the presence of one of the old 'green' type of sewage-farm. Raines (1957) discusses the conditions, vegetation and some of the invertebrates, which form the principal food supply of wading birds at the celebrated Nottingham sewage-farm. Both these papers convey the importance of the habitat to waders mainly, but also to ducks, gulls and terns to a lesser extent, and classify the farms as artificial marshes. The relationship between birds and sewage disposal on the coast however, is rather different, but the localities where the sewer contents become available as food materials are important gathering grounds for birds.

During the years 1955-59, while I was living at Scarborough, I came into contact with the birds which occurred at two sewer outlets serving the town, on many occasions. Although the study of birds in this habitat was not my primary objective, I was impressed by the constant patterns of the birds' behaviour and the high numbers which appeared to exploit the food available.

A major disadvantage to observations made in this habitat was the difficulty of identifying specific articles of diet. These were often in view for only a few seconds as the current from the sewer carried them to the surface and into the feeding zone of the gulls. However, on occasions pieces of animal tissue, sometimes bacon scraps, could be distinguished. The Scarborough Borough Engineer (pers. comm.) gave me a guide to the general nature of the sewage and this was useful in assessing the relative importance of the two main outfall sewers to birds. The sewer serving the northern part of the town normally had the higher bird population and this seemed to be related to the nature of the sewage. This sewer, which enters the sea at extreme low tide level to the north of the Scalby Ness headland, carries domestic sewage and abattoir waste. The latter consists of most of the blood, plus a certain amount of meat scraps, offals, fat and manure from a weekly average of 50-80 cattle, 250-500 pigs and 120-500 sheep. The higher figures refer to the summer period when many people are on holiday in the town. The sewer serving the southern part of the town carries mainly domestic waste and enters the sea to the east of the harbour. This sewer is well sited for observation with the outfall a short distance from the harbour wall.

The bird community of the area round the sewer outlets was dominated by gulls; five species of which occurred regularly. I never saw Fulmars (*Fulmarus glacialis*) near the outlets, and thought that this was rather surprising in view of the manner in which this species accepts fish, offals, etc. at sea. McGill (1960) and Hindwood (1960) mention large congregations of albatrosses, petrels, gannets, skuas, gulls and terns which feed around a sewer entering the sea off Malabar Headland, New South Wales, and the numbers of Procellariiformes are most impressive. This sewer carries waste from the Holmebush abattoirs and attracts up to 500 Wandering Albatrosses (*Diomedea exulans*), up to 100 Giant Petrels (*Macronectes giganteus*), and large numbers of other species, especially the Black-browed Albatross (*Diomedea melanophris*).

Cormorants (*Phalacrocorax carbo*) and Eiders (*Somateria mollissima*) occurred at Scarborough round the northern outfall from time to time, and may have been attracted by the fish and crustaceans which had gathered to feed on the sewer effluent. Eiders occurred frequently off a sewer which enters the sea to the north of Filey Brigg, and on occasions brought crabs to the surface and held them in view long enough for me to identify them as *Carcinus maenas*.

The gulls which fed regularly could be divided into two groups by the feeding technique which they normally used. The Great Black-backed (*Larus marinus*) and the Herring Gulls (*Larus argentatus*) formed one group. These normally fed by resting on the sea, in the patch of oily water which marked the emergence of the sewage, and picking up particles of food as they reached the surface. Although Herring Gulls often feed by plunging into the water and half submerging when they are in the harbour, they did not adopt this method at the sewers where it would appear to be effective. Usually 3-5 Great Black-backs and up to 20 Herring Gulls were present at the northern outfall, but at the southern outlet Great Black-backs

were rather irregular in their occurrence. While these species ranged over the oily water, bouts of aggression occurred, but the Great Black-backs dominated the area.

The three smaller species which made up the second group were the Common Gull (*Larus canus*), the Black-headed Gull (*Larus ridibundus*) and the Kittiwake (*Rissa tridactyla*). These occurred in mixed flocks of up to 300 birds on occasions. Their normal method of feeding was by flying slowly, heading into the wind, over the patch of effluent and dropping to surface level to pick up small particles of food. When conditions of wind and tide spread the patch of oily water into a long strip, the actions of these birds were particularly impressive. The compact flock moved slowly along the oily slick with birds occasionally dropping to pick up food, and as they reached the limits of the oily water, they would sheer off and fly back to the end of the flock, repeating the manoeuvre sometimes for hours.

The Common Gull was present in the area at all times of the year except for the breeding season, but was most abundant during February and March. At this time of the year flocks of about 100 could be seen in the vicinity of the southern outlet. Some of these flocks appeared to be on migration and passed on in a few hours.

The Black-headed Gull was over the whole period the most numerous bird at both outlets. In the late autumn, flocks of 200-300 occurred over the northern outfall, and even in the breeding season a few non-breeding birds remained. This species is also the most frequent of the gulls at inland sewage farms, and seems to have established a niche for itself in the ecology of sewage disposal. Fisher and Peterson (1956) mention the occurrence of up to three individuals at a time in recent years off a sewer outlet at Newburyport, New Jersey.

There is a colony of Kittiwakes on Castle Hill at Scarborough, and the species occurs regularly at the southern outfall. In the spring and summer up to 30 birds could be seen there, and in the winter a few individuals remained. These were often in faded and worn tarrock plumage and frequently appeared to be in poor condition. This species is adept at picking up food while in flight and easily outmanoeuvres the other small species.

In October, 1959, when Little Gulls (*Larus minutus*) were widely reported on the east coast, I watched two first-winter birds over the sewer outlet to the north of Filey Brigg. This species is mentioned by Boyd (1957) as occurring fairly frequently at inland sewage farms. At Filey, they fed with Common and Black-headed Gulls and used the same feeding technique. Iceland Gulls (*Larus glaucooides*) visited the southern outfall occasionally and fed with the Herring Gulls, but the Glaucous Gull (*Larus hyperboreus*) preferred the fish pier along with the majority of the Great Black-backs in the district.

As these notes were reaching completion I paid another visit to the northern sewer outlet near Scalby Headland. This took place on the 3rd June, 1961, at the time of year when the gull population of the area is at its lowest. Six Black-headed Gulls, two Common Gulls and two Kittiwakes were flying over the area where the effluent emerged and a single Great Black-back stood on the exposed end of the sewer pipe. Of these, only the Kittiwake is present in the district as a breeding bird.

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Macdonald Hastings' Country Book. Pp. 224 with coloured frontispiece, 30 photographs and decorations by Robin Jacques. George Newnes, London, 1961. 30/-.

Anthologies are apt to be impersonal scrap-books but this collection of prose and poetry reflects the development as a countryman of one of our best-known writers and broadcasters on country life; for the author's own comments and reflections interspersed throughout the book add a personal and genial flavour to the aura of the English countryside which pervades the selections. Ideal as a bedside book for the country lover.

PALLAS'S LEAF WARBLER AT SPURN—A BIRD NEW TO YORKSHIRE

J. M. BUTTERWORTH AND P. H. G. WOLSTENHOLME

ON the afternoon of October 22nd, 1960, the writers, newly arrived at Spurn Bird Observatory, were walking down the road a little south of the narrow neck when a small bird appeared in the leafless bushes on the dunes above road-level. We moved up to the dunes and the first good view made it clear that this was something very unusual. The bird was not wary, but was extremely active and could move surprising distances through the bushes without showing itself. It was under observation for about three-quarters of an hour with $8\times$ binoculars and down to 6 ft. in good light. Its very active behaviour included 'flycatching'.


We took independent field notes and the following is compounded from the two descriptions, which in fact differed hardly at all: 'Small warbler, about Goldcrest size; upper parts dark green, with tail feathers and primaries darker than the rest. Short but very conspicuous yellow wing-bar, conspicuous yellow eye-stripe and crown-stripe. Rump pale lemon-yellow. Underparts white with very faint wash of yellow on throat and upper breast. Bill dark; iris dark; leg colour not seen. Call, "sweet".' A full description was entered in the observatory log that night, concluding as follows: 'After consultation with the *Handbook* and H. G. Alexander in *British Birds*, 48, 294 (1955) it would appear to be *Phylloscopus proregulus* (Pallas). The absence of a second wing-bar perhaps being explainable by the wear of tips of the wing-coverts.'

Early on October 23rd we found the bird within a hundred yards of where we had last seen it the previous evening. It was caught in the near-by Heligoland trap, taken up to the Observatory and there ringed, measured and photographed and a detailed description was taken of the bird in the hand. H. G. Brownlow took measurements and the wing formula which were as follows:

Emarginated

1	2	3	4	5	6	7	
+9	-6	-0½	longest	-0½	-1	-5mm.	The 2nd primary was about equal to the 8th.

Wing, 49.5 mm.; Bill from skull, 10 mm.; Tarsus, 15 mm.; Tail, 38 mm.; Weight, 4.61 gm.

The detailed description was taken by R. F. Dickens, P. H. G. Wolstenholme, P. J. Mountford, M. Densley, and Miss C. Shaddick. The bird was also seen by eight other observers at the observatory. The full description is available in the Spurn Bird Observatory log for October 23rd, 1960. The salient features were: crown, olive green with black tips to feathers, especially towards the back of the crown. Very distinct superciliary eyestripe of lemon-yellow, the two superciliary stripes meeting above the bill. The crown had a distinctive paler lemon-yellow central stripe. A dark stripe through the eye circled back in a  shape near the nape. The superciliary and crown stripes continued on to the nape and broadened, and here the darker head feathers gave a striped appearance. The rump was a distinctive and conspicuous pale lemon colour. The primaries from 6th to 10th were sharply pointed. The greater and median coverts had broad lemon-yellow tips, forming conspicuous double wing-bars when seen in the hand. The bright colour of these tended to imply that the bird was an adult.

When the bird was released, it perched a few feet from the observers on a bramble. The three head stripes, the yellow rump and the outer wing-bar were obvious, but the inner wing-bar could not be seen until the wind ruffled the coverts.

Four hours after this bird had been released, a bird with similar field characters was seen by nearly all observers, in thick cover at the Point—3 miles or so away. Its active behaviour, flycatching and quick movements recalled the observations of the previous day. *Single* yellow wing-bars, yellow superciliary stripe, yellow rump, etc., were clearly seen, but no one was able to discern whether the bird was ringed or not.

Pallas's Leaf Warbler breeds no nearer to Britain than the Krasnoyarsk area (56°N , 92°E .) of southern Siberia and winters in south-east Asia, so it is hardly surprising that the record for Spurn is only the sixth for Britain. Doubtless the easterly winds which prevailed so much during the autumn of 1960 were a contributory factor to the arrival of this tiny warbler, which is in fact rather smaller than a Goldcrest. A bird of the same species was seen in Essex six days earlier than the bird at Spurn.

WADER RINGING AT CHERRY COB SANDS

DAVID MILLIN

DURING the past three years I have, with the assistance of David Goode, made some twenty-five attempts to trap waders with mist-nets at Cherry Cob Sands. These efforts have resulted in the ringing of 148 birds of eight species, but it is significant that two-thirds of this total were ringed in only four visits and as many as nine visits were complete failures. Since I have left the district I feel that it is worth recording the conditions which appear to be necessary for successful trapping in the hope that it may encourage others to continue this work.

Cherry Cob Sands consist of a large area of saltings between the Humber and the sea wall which, under suitable conditions, provide a resting and feeding place for large numbers of waders at high tide. With a tide of 28 feet the birds start coming up on to the saltings from the mudbanks in the river about two hours before high water (which is some 20 minutes earlier than high water at Hull). With a 26 ft. tide the start of the flight is only an hour or so before high tide. The larger waders come up first and many often fly inland. Those remaining usually settle on the deeper pools, whereas the smaller waders mostly choose the shallowest.

As there is a complete lack of background, daylight netting is quite hopeless. Before attempting it after dark it is advisable to watch the high tide flight in daylight to see where the main flocks are settling; the particular pools chosen sometimes vary considerably from week to week depending perhaps on the depth of water. Considerable experience of the salting is advisable before walking over it in the dark and it is essential to obtain the landowner's consent beforehand.

The most important factors for success appear to be the following:

1. The tide should be between 26 and 29 feet in height. Lower tides do not bring many birds on to the saltings and higher ones may flood the saltings extensively, endangering trapped birds and ringers. These limits are only approximate and allowance should be made for the amount of land water in the river.

2. Nets should be erected *in complete darkness* on the upwind side of the selected pools *before* the birds come on to the saltings. If a few birds happen to see the nets in semi-darkness, all will avoid them even when it becomes completely dark. It should remain completely dark at least until high tide. There should be *no* moon at all unless the cloud cover is very dense; even this latter is undesirable since light reflected from the clouds above Grimsby and Hull becomes quite noticeable rendering nets visible against the skyline.

3. The wind should not be stronger than about force 4. It seems likely that even in total darkness the sound of the wind in the nets is sufficient to warn the birds.

To summarise: Ideal conditions are represented by a still, moonless night with little or no cloud and a high tide of 26½-28 feet between about three hours after sunset and dawn. Suitable combinations of tide and moon occur only a few times each month and with the added restrictions of weather there are probably less than twenty ideal nights in a year. Nevertheless, if only half of these were properly exploited several hundred birds could be ringed in a year.

We have used chiefly single shelf nets and erected not more than one per ringer. It is also imperative that they should not be set *over* water or very muddy ground. A good torch for each ringer is obviously essential and should be fixed to one's person to leave both hands free. Practice in extracting birds from mist-nets in the dark is also desirable. The large mesh wader nets are of somewhat limited use. They are easily seen against the slightest skyline and, although the only thing suitable for curlew, one or two of the latter struggling are sufficient warning for any other birds. If curlew are sought it seems best to remain fairly close to the net and extract birds as soon as they are caught. For the smaller waders it is best to wait some distance away until they have settled down on the chosen pool and then approach very slowly upwind. The birds can often be 'walked' across or round a pool to the desired position and then flushed upwind in the direction of the nets.

Apart from one retrapped curlew, only one recovery has so far been reported. This was a dunlin caught aboard a trawler in the North Sea. However, two dunlin bearing Norwegian rings have been trapped and have provided ample stimulus for this work.

[The tide-heights quoted are taken from a tide table published in Hull and widely used in the Humber area. They refer to the height of water at the lock sill at Albert Dock, Hull.]

In the summer of 1959 a short, thirteen-week study was carried out on the fungi growing upon kestrel pellets, with a view to finding out whether a distinct fungal succession occurred. Two suitable nesting sites of the common kestrel were located and studied for several weeks prior to clearing the area immediately about the nest of refuse and plant debris before the survey began.

Both sites were in Derbyshire located on rocky ledges, one in an old quarry near Hathersage, the other on a natural outcrop in a moorland valley above the Derwent Reservoir system. The vegetation about the ledges and at the base of the rock faces was carefully noted.

The former site was visited every two days and cast pellets collected in sterile phials. The pellets were found in three distinct areas, each given a letter for easy reference; some were found on the dry, almost soil-less ledges below and about the nest, others were found on a grassy platform frequented by sheep, rabbits and in the late summer by amphibia from a nearby pond. The third series of pellets were found at the base of the rock face beneath or suspended amongst bracken fronds, and sometimes partially buried in plant debris.

On returning to the laboratory the pellets were placed in an incubator consisting of a sterilised jam jar containing a loose pad of damp filter-paper pulp at the base. The pellets were mounted on a filter-paper on this pad, kept at 20°C. and examined every day, each pellet being suitably labelled for the subsequent tabulation of the results. Observed fruit bodies of fungi were picked off the pellets as they appeared, examination being carried out with a binocular microscope. Both single spore cultures and multi-spore cultures were obtained and the organism responsible for the sporophore studied and identified, whenever possible. Depending on the fungal organism isolated different agars were used for their culture.

On examination of the fungi tabulated for each pellet and at what time each appeared it was soon appreciated that there was a definite pattern of colonisation and this was confirmed by comparison with the results obtained from the second site examined at slightly longer intervals of time. The fungi which could not be given specific epithets were numbered for easy reference, under their respective genera.

Certain organisms appeared time and time again in samples from both sites, others were rather more sparse. This was to be expected, and it indicated that hawk pellets have a composition suitable for a rich, though probably rather specialised, mycological flora. The succession appears to be parallel to and superficially resembles dung colonisation to which in detail it is quite different. Thus *Sordariaceae* and *Ascobolaceae* appear to be absent and are replaced by perhaps more primitive orders of Ascomycetes belonging to the *Plectascales* in the families of *Onygenaceae*, *Eurotiaceae* and *Gymnoascaceae*. The sugar fungi seem to be the first colonists producing rapid growth and numerous sporophores as in the colonisation of many other substrates and there may be a similar if not identical series of species. The *Pilobolaceae*, however, typical of dung, are absent possibly being replaced by more unusual and impressive phycomycetes such as *Cunninghamella echinatulata* Thaxter and *Mortierella jenkinsii* (Smith) Naumov. *Absidia orchidis* (Vuill.) Hagem. was also isolated from pellets of similar age.

The lignin decomposers and cellulose users of the dung succession are absent, this being explained by the fact that kestrel pellets have little plant material in them, that which is found probably being derived from the gut of the animal prey taken. Thus seeds of *Vaccinium vitis-idaea* were identified in a pellet containing the tarsus and feathers of some passerine bird. Nevertheless a parallel stage in the succession is expressed. The pellet is made up in the main of hard parts of certain beetles, fur, scales, bones and occasionally feathers; thus the colonists typifying this stage appear to be able to break down completely or partially the keratins and pseudokeratins of the hair, etc., and the protein material of the bone and fatty parts. The beetle legs and elytra appear to be little affected by fungal activity.

Examining existing records it would seem that the fungi isolated are practically confined to this or a very similar type of substrate. A discomycete very close to *Lachnea cadaverina* Vel. was first described from a rabbit corpse, *Anixiopsis stercoraria* (Hans.) Hans. has been recorded on fox food debris and *Arachniotus ruber* (Van T.) Schroet. on dog dung. All were recorded from the kestrel pellets. On felt and horse hair is found, but not frequently, *Onygena corvina* A. & S. ex Fr. This

appeared as a final stage of colonisation on nearly all the pellets from the Derwent Reservoir site.

Several hyphomycetes appeared, many of great interest and some with marked physiological properties. Thus *Trichocladium asperum* (Hanz.), Hughes, *Stachybotrys chartarum* (Erenbh.) Hughes and *Chaetomium globosum* Kuntze are all able to decompose cellulose rapidly in the presence of a suitable source of other organic food material. A series of powdery white hyphomycetes appeared on the pellets in all the samples from both areas and although at least eight distinct types were isolated and described they all appeared to be referable to the genus *Sporotrichum sens. lat.* Most had aleuriospores as opposed to phialospores. Only *Aleurisma carnis* (Brooke et Hansford) Bisby and *Geomyces vulgaris* Traaen. were identified. One of the species isolated exhibited racquet hyphae similar to those found in some of the pathogenic ring fungi of mammals. *Fusaria* were only too numerous both on these pellets and pellets collected in the dunes at Ainsdale, Lancs., during mid-May. Many isolates appeared to be of the less common *Fusarium sporotrichoides* Sherb.

It could be seen throughout the study that the fauna of the pellet had an important influence to play in the fungus succession. Thus nematodes and mites were very active on and in the pellet especially in the closing stages of the colonisation in the case of the latter. Many spores were found adhering to the nematodes' cuticle and in this way spores were taken below the surface of the pellet and likewise others were brought up to the surface. The active nematode was a free-living species of *Diplogaster* and soon it was seen that their activity was reduced by a nematode-trapping fungus. *Arthrobotrys oligospora* Fres. began to fruit on the pellets as glistening patches with a marked decrease in nematodes and an *Arthrobotrys* stage was superimposed on the pellet colonisation, the appearance depending on the induction period of the nematode and its population. Careful dissection of the pellet yielded hyphal traps.

By a modification of the soil plate method and Chesters' soil smear techniques, fungi were isolated which appeared not to be fruiting on the surface. These included many phycmycetes. Also from a falcon pellet collected in the sand dunes at Freshfield, Lancs., *Penicillium clavigerum* Del. was isolated.

Many of the colonists were best isolated from where the pellet sat on the filter paper; thus *Chaetomium globosum* grew freely on the pulp about the pellets along with *Acrospeira monodictys* (Wiltshire) Hughes, *Stemphylium* sp. and *Alternaria tenuis* Nees as well as on the pellet surface. Similarly a species of *Melanospora* was isolated from pellets and on a bird carcass in association with the pellets on the ledges, *Trichothecium roseum* Link was found growing on the fat along with *Acremoniella atra* (Corda) Sacc. No direct relationship could be observed between the latter and the *Melanospora*.

The source of the fungal propagules may be from entirely different systems; the sugar fungi especially are more liable to be colonists from the soil and plant debris, indicated by the fact that many species were absent from the pellets found on the ledges. Airborne spores may also play an important part in the colonisation and this could be studied by suspending previously sterilised pellets about the nesting site for known periods of time. Spores from the gizzard and original animal prey, stimulated by gastric juices as in some of the dung fungi were not shown because of the short period of the study. Some nematodes however may pass from dung on to beetles which then fall prey for hawks, encyst and are passed out in the pellets. Both soil plates of samples from about the nesting site and air spore plates during the period of study were taken suggesting in both cases each phase could be a source of some infection.

One reason for recording this brief study in *The Naturalist* is that just sixty years ago a similar study was published in this journal (Dec. 1901) by Needham and Crossland, two pioneer mycologists from Hebden Bridge and Halifax respectively. They recorded the succession of fungi on an old cast-out hearth rug in Peket Wood near Hebden Bridge. Although details of this succession are different from those observed above, the parallel is much closer than with the colonisation succession on dung. The hearth rug had both animal and plant components and basidiomycetes were recorded after careful and continual observation throughout its slow and long putrefaction. No basidiomycetes fruited on the kestrel pellets and no clamp-connected hyphae were seen throughout the study. This may have been due to the short period of time available for observations, but however short, this inquiry demonstrates that a natural substrate does exist in the field for fungi so often isolated

from soils by hair bait methods by soil microbiologists and dermatologists. It also suggests a means of distribution of these specialised types by bird movement. Even the fluttering of young birds when the parents bring food is enough to push pellets off the ledges into the undergrowth below, there to come into contact with other animal life.

CONCLUSION

The results of the survey illustrate the succession of fungi to be found on kestrel pellets. Thus four more or less distinct stages could be recognised typified by the appearance of certain species of fungi.

1. *Mucor hiemalis* stage, including the majority of the phycomycetes which occur although these may continue into later stages.
2. *Sporotrichum*-*Aleurisma* stage typified by members of either or both of these genera and the appearance of hyphomycetes such as *Stachybotrys* and *Trichocladium*.
3. *Anixiopsis* stage typified by *Anixiopsis stercoraria* accompanied by active growth of the hyphomycetes associated with stage two; the appearance of new ones also including sexual stages and the disappearance of *Sporotrichum*.
4. Final stage where only fur and beetle elytra are left, characterised by *Onygena corvina* or *Arachniotus ruber*. Other fungi gradually die out being replaced by the alga *Pleurococcus nagelii*. An *Arthrobotrys* stage is superimposed as discussed above.

A full report has been deposited at the Botany Dept., Sheffield University, where the survey was carried out, along with pellet analyses and chemical data. Many of the species isolated have been deposited in my herbarium.

SOME OBSERVATIONS ON THE NESTING OF EASTERN COLLARED DOVES (*STREPTOPELIA DECAOCTO*) IN LEEDS, 1961.

ARTHUR GILPIN

ON June 31st, 1961, I heard a collared dove singing in the grounds of Leeds University. Knowing the species well from previous familiarity with it in Jutland I had no doubt about the identity of the bird, but I moved into a position from which I had a good view of the singer. It was perched on a dead branch some twenty-five feet above the ground and alternately sang and preened itself. I was not unduly surprised by the presence of this bird as I knew Mr. S. J. Wells had been watching collared doves in North East Leeds, the first of them having arrived in early May.

At 9.0 a.m. on August 10th, there were three birds of this species some two hundred yards from where I had seen the first. They were in a highly excited state, two of them singing and displaying. At one time all three were perched on the rim of a ten-inch-diameter chimney-pot, the singing birds with heads held low and throats expanded. One of the cocks eventually flew off to perform a display flight similar to that of a wood pigeon. On rapidly beating wings he rose, almost vertically, to a height of about forty feet and then planed down in a long glide with wings and tail held rigid; the latter being widespread and held at an angle showing the distinctive black band on the underside of the tail feathers.

From August 12th only two birds were present. On that day the cock sang from a chimney while the hen—with feathers raised and eyes closed—sunned herself some two feet from him. Later the same day one of the birds feeding in a flower-bed allowed me to approach to within four yards of it.

For the next few days the weather was dull and the birds were very quiet, the hen often perching in an ash tree close to the cock's favourite song perch. It was on this branch that the nest was built. Material was being carried on August 20th, but nest construction may have started the day before. On August 24th, I watched the hen—she had less white above the black neck band than the cock—collecting fine roots from a flower bed while her mate ran about close by.

A bird was perched at the nest, although not actually sitting on both 25th and 26th of the month and the cock was still doing display flights on the latter date. There were two eggs in the nest when I climbed to it on August 28th. As the nest was about twenty-seven feet from the ground and in a tree overhanging a busy road it was not easy to visit it without attracting unwelcome attention. From August 28th to September 2nd, I saw the bird sitting each day, although the nest was usually

left unattended for a short time at about 9.0 a.m. each morning. It was noticeable that when incubation had started singing, almost ceased, and the birds were unobtrusive.

A terrific thunder storm raged over Leeds for several hours on September 2nd and 3rd and although I visited the site several times during the morning of the 4th I failed to see either of the collared doves. I had to leave Leeds during the afternoon and I asked two of my colleagues to note whether the bird was sitting whenever they passed the nest. When I returned they told me a bird had been incubating on the afternoon of September 4th, and on several subsequent days, but unfortunately neither had noted the last date on which they had seen this. Passing the nest several times on September 11th and 12th without seeing a bird present, I climbed to it and found it held a dead, rather dried up day old chick.

When examined in detail the nest proved to be more substantial than it had appeared from the ground. It was approximately nine inches across, almost flat on top and was constructed of thin twigs with a lining of fine roots. Collared doves are well known for their liking of wire as a nest building material and it is interesting to note that two old fashioned wire hairpins were used in this nest. Where the birds found them at a modern university is the cause of some conjecture.

Although the birds had been missing from their territory on September 11th, I came across a singing cock in a residential area West of the University on that day. This was my first contact with the species in this area and everything pointed to the bird being one of the pair from the deserted nest. Song continued and on September 14th, I watched the hen running along the branches of a black poplar while her mate sang from a nearby chimney pot. Growing in a backyard, this tree was about three hundred yards from the one previously used. As she had done in the ash, the female soon showed an attachment for one particular spot and perched there while the cock sang.

Eventually the nest was built at the chosen place, in a cluster of twigs where an upright branch had broken from a bough. This was about forty feet from the ground and the nest could not be seen from below until early October when the leaves began to fall. From the 2nd to 13th of that month, the bird was seen sitting each day.

Having to leave Leeds for the week-end I asked friends to watch the nest. The last day on which they saw a bird sitting was October 14th. On that day the weather turned very cold and the following days were also cold and rainstorms were frequent. Although the site was under observation until October 24th the birds were not seen again.

It was disappointing that after two attempts this pair of doves did not rear any young. There were probably small young in the second nest when it was deserted. Owing to the proximity of houses the nest was not closely examined, but there was never any sign of interference by humans.

Mr. S. Wells continued to see collared doves in his area until the end of the year and into 1962, the largest number seen being six on July 6th. Mr. J. Walker, who assisted me in watching the second nest, had—at another place nearer the centre of Leeds—been hearing the song of this species in the dawn chorus from May 10th onwards. Neither saw a nest, but in both areas there were plenty of suitable sites. Each of them lost touch with the birds for varying periods and it is worth noting that the pair I had under observation became quiet and unobtrusive once eggs were laid. If I had not known the position of the nest I could easily have overlooked the birds.

FIELD NOTE

First Winter Record of Yellow Wagtail (*Motacilla flava*) in Yorkshire.—

On January 28th, 1962, Mr. T. Grant informed me that on the previous day he had seen a Yellow Wagtail feeding on the refuse tip of a maggot farm at Swinton, near Mexborough. He again saw the bird on four subsequent days to February 3rd, when I was able to visit the site, and catch it in a mist-net. Detailed measurement, and examination of wing formula and plumage in the hand, left no doubt that it was a female of this species, probably a first-winter bird. It was also seen to have completed a wing-moult, and to have partially moulted some of the body feathers. This appears to be the first recorded wintering of a Yellow Wagtail in Yorkshire, and only the fourth British record.—R. J. RHODES.

LINCOLNSHIRE SPHAGNA

MARK R. D. SEAWARD

In 1950, Richards and Wallace (14) published their *Annotated List of British Mosses*, in which the genus *Sphagnum* appears with only thirty species. Of these species, only those of the *Subsecunda* group retain their varieties. My aim here is to provide a list of Lincolnshire *Sphagnum* in keeping with modern trends of nomenclature, and to indicate wherever possible the alternative names which have been used in the classification of the Lincolnshire species.

The *Census Catalogue of British Mosses* (6), and *Supplement* (7), contain 18 species and 30 varieties of *Sphagnum*. These records are based on the nomenclature of Dixon (5). The *Sphagnum* records for Lincolnshire in these two publications are only twelve in number, although the Allison Check-list of 1931 (1), and 1932 (2), contain 28 records. Allison's records were verified by Sherrin, and it was therefore not surprising that when Sherrin published his *Census Catalogue* in 1937 (16), there was an increase of Lincolnshire records. Allison had in the meantime discovered seven more records, and published his findings in the *Lincs. Nat. Union Transactions* for 1933 (3), and 1935 (4). If, however, Allison's records are classified according to Richards and Wallace (14), there are only ten species and three varieties of *Sphagnum* present in Lincolnshire. Since that date there have been only two additional records, see Seaward (15).

Although Lincolnshire is the second largest county in the British Isles and is composed of two Watsonian vice-counties, the distribution of *Sphagnum* is somewhat limited. This limitation has been brought about by the intensified practice of agriculture, not only in recent years, but for many generations. This may best be illustrated by Young's account of the agriculture in the East Fen in 1799 (18). The East Fen was the last drained fenland of Lincolnshire, and the Act for draining this area was obtained in 1801 (17). According to Oldfield, in 1829 every site, even the sites of the deepest pools, were arable land, meadow or pasture (10).

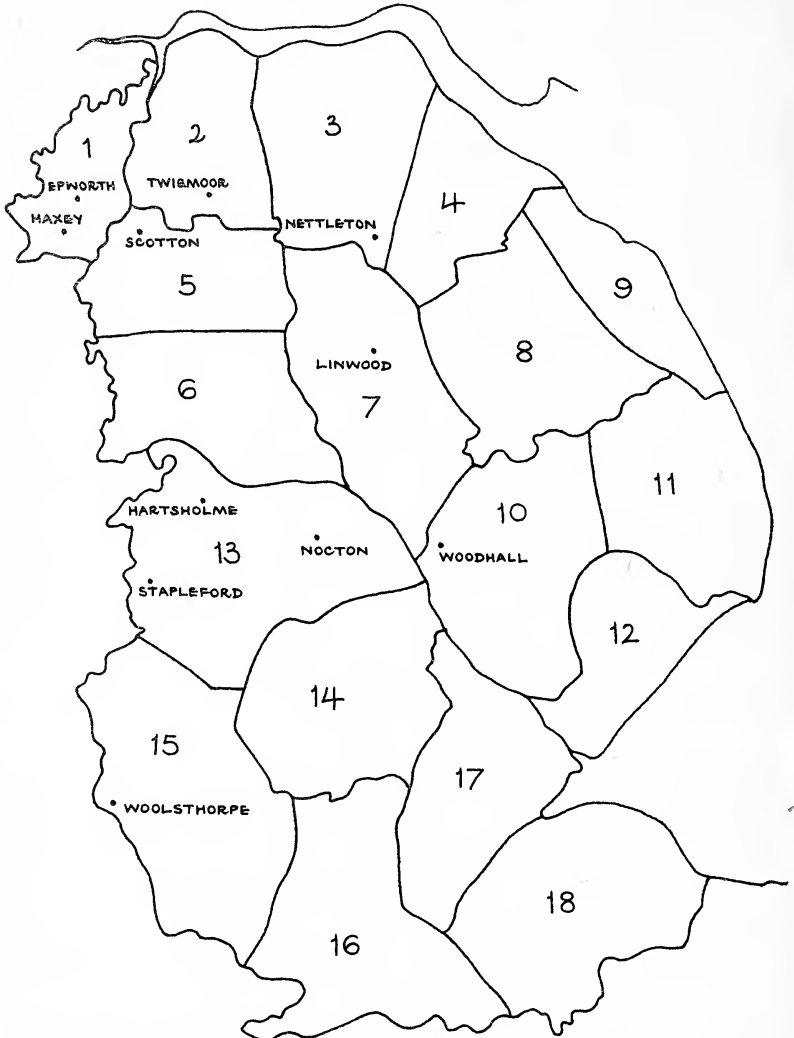
According to Woodruffe-Peacock (12), the peat flashes of the moorland escarpment west of Crosby Warren were one of the most striking ecological areas in the county from 1850 to 1892. It is however, interesting to note that *Sphagnum* is more or less rare in Lincolnshire peat. Its place is taken by *Drepanocladus fluviatilis* (Hedw.) Warnst. (11). These peat flashes had remained in this state for many years until Woodruffe-Peacock's visit in 1892. The dry series of seasons which began in 1893 completely changed the characteristics of this district. *Sphagnum* and its accompanying species almost disappeared.

Similar changes have taken place on Linwood Warren. These changes were described by Lees in 1900 (9). According to Lees, in 1878 Linwood Warren was a wet peaty tract of water-logged sand on Kimmeridge clay, and produced several rare species of plants, including the moss *Breutelia chrysocoma* (Dicks.) Lindb. When Lees examined the area again in the late eighties, some water-cuts had been made and many seedling firs had encroached on the moor. In 1897, when Lees visited the area for the last time, he noted that the ground was for the most part well-bushed and clad with *Calluna*. Linwood Warren was purchased by the Lincolnshire Naturalists' Trust Ltd., in 1957. It is about 66 acres in extent and is the largest remaining tract of open heathland in the district.

This sort of change may be observed in a greater or less degree, taking place slowly or rapidly, all over the country. In Lincolnshire, the change has been rapid and the effects pronounced with regard to the present-day distribution of the *Sphagnum*. The main localities from which *Sphagnum* have been recorded, together with their appropriate divisional reference (8), are indicated in the following map of Lincolnshire:

The first reliable *Sphagnum* record for Lincolnshire is that of *S. palustre* Linn. by Peck in 1815 (18), and the first preserved specimen was collected in 1833 at Ranby (see: C. M. Coutley Collection, Ipswich Museum.)

The distribution list which follows is by no means exhaustive, but it is the first attempt to gather together the scattered records and to bring them into line with modern nomenclature. I should particularly like to thank Miss E. M. Lobley for her help in confirming and, in many instances, identifying the Lincolnshire Herbarium material.



V.C. 54 IS COMPOSED OF
DIVISIONS 1-12.

V.C. 53 IS COMPOSED OF
DIVISIONS 13-18.

NATURAL HISTORY DIVISIONS
OF LINCOLNSHIRE.

1/1 *Sphagnum palustre* Linn.

S. cymbifolium Ehrh. and including vars. *glaucescens* Warnst. and *squarrosulum* Nees and Hornsch.

First record: Isle of Axholme, 1815, Peck.

* 1 Isle of Axholme, Owston Ferry, Epworth, Crowle.

2 Brumby, Twigmoor, Scunthorpe.

3 Nettleton.

* 5 Scotton, Laughton.

* 7 Linwood, Osgodby Moor, Middle Rasen.

10 Woodhall.

Common, but there are no records for South Lincolnshire.

Margins of bogs and wet moorland places; never floating.

1/4 *Sphagnum papillosum* Lindb.

Including var. *normale* Warnst.

First record: Linwood, November, 1878, Lees.

* 2 Manton.

* 5 Scotton.

* 7 Linwood

13 Nocton.

Infrequent. In hummocks, in drier locations than *S. palustre* Linn.

1/6 *Sphagnum compactum* DC.

S. rigidum Schp. and including var. *subsquarrosum* Warnst.

First record: Linwood, July 1878, Lces.

* 5 Scotton.

* 7 Linwood.

Locally frequent. Limited distribution.

Compact tufts on heath and moorland.

1/9 *Sphagnum squarrosum* Pers. ex Crome.

including vars. *imbricatum* Schp., *spectabile* Russ. and *subsquarrosum* Russ.

First record: Manton, 1926, Allison.

* 2 Manton.

5 Laughton, Scotton.

* 6 Torksey.

* 7 Usselby.

10 Woodhall (fertile plants).

13 Doddington.

*15 Woolsthorpe, *Lincs. Nat. Union Trans.*, **15**, 41, (1959).

Common. Boggy areas.

1/13 *Sphagnum recurvum* P. Beauv.

S. intermedium Hoffm. and including var. *majus* Angstr.

First record: Twigmoor, 1892, Peacock and Davy.

* 1 Haxey, Isle of Axholme.

* 2 Twigmoor, Manton.

3 Nettleton.

* 5 Scotton.

* 7 Linwood, Usselby.

15 Woolsthorpe, *Lincs. Nat. Union Trans.*, **15**, 41, (1959).

Common. Submerged in bogs and pools.

1/14 *Sphagnum pulchrum* (Lindb.) Warnst. There are no Lincolnshire records for this moss. Specimens entered under this heading proved to be *S. recurvum* P. Beauv.1/16 *Sphagnum tenellum* Pers.

S. molluscum Bruch.

First record: Scotton, 1958, Rose in *Trans. Brit. Bryol. Soc.*, **4**, 158, (1961).

Distribution limited to Scotton in division 5.

Possibly overlooked, due to small, delicate nature of this moss.

1/17 *Sphagnum cuspidatum* Ehrh. ex Hoffm. emend.

Including vars. *plumosum* Nees and Hornsch. and *plumulosum* Schp.

First record: Linwood, 1877, Lees.

- * 1 Haxey, Epworth
- 2 Twigmoor.
- * 5 Scotton.
- * 7 Linwood.

Frequent. Wet heaths and pools.

1/19 *Sphagnum subsecundum* Nees.

Including var. *intermedium* Warnst.

First record: Linwood, 1877, Lees.

- * 1 Epworth.
- 2 Brumby Moor, Manton.
- 5 Scotton.
- 7 Linwood.
- 10 Woodhall
- 13 South Moor, Stapleford, Whisby.

Frequent, but there are no recent records for this moss in South Lincolnshire. Highly variable both in form and habitat.

var. b. *inundatum* (Russ.) C. Jens.

S. inundatum Warnst. and var. *lancifolium* Warnst., and also including *S. crassicladium* Warnst. var. *diversifolium* Warnst.

First record: Scotton, 1926, Allison.

- * 1 Epworth, Haxey.
- 3 Nettleton.
- * 5 Scotton.
- 10 Woodhall.

Frequent. Wet heaths, ditches and pools.

var. c. *bavaricum* (Warnst.) Aberg. emend.

First record: Scotton, 1932, Allison in *Lincs. Nat. Union Trans.*, 8, 92, (1932).

Distribution unknown. There are no local herbarium specimens.

var. d. *auriculatum* (Schp.) Lindb. emend. Aberg.

Including *S. camusii* Card. and *S. aquatile* Warnst.

First record: Scotton, 1930, Allison.

- * 1 Isle of Axholme, Haxey, Epworth.
- * 3 Wrawby, Nettleton.
- * 5 Scotton, Laughton.
- * 7 Linwood.
- 13 Stapleford Wood (det. W. R. Sherrin).

Common. Ditches and sides of pools in more shady places. There are also interesting records for *S. turgidulum* Warnst. (included now under var. *auriculatum*) from Epworth and Haxey in 1934 by Allison. According to Sherrin, this was only the third true record for Britain.

1/20 *Sphagnum fimbriatum* Wils.

Including vars. *flavescens* Warnst., *laxifolium* Warnst., *tenue* Grav. and *validus* Card.

First Record: Manton, 1926, L.N.U. Meeting.

- 1 Epworth.
- * 2 Manton, Twigmoor.
- * 5 Laughton, Scotton.
- * 7 Middle Rasen.
- * 10 Kirkby-on-Bain.
- * 13 Hartsholme.

Frequent. Numerous records for fertile material. Lowland species with variable habitats.

- 1/21 *Sphagnum girgensohnii* Russ.
First record: Hartsholme, February, 1960, Seaward in *Trans. Brit. Bryol. Soc.*, **4**, 158, (1961).
Uncommon. Possibly overlooked. Distribution unknown.
- 1/26 *Sphagnum nemoreum* Scop.
S. acutifolium Ehrh.
First record: Linwood, 1877, Lees.
1 Isle of Axholme, Haxey.
2 Manton.
7 Linwood.
10 Woodhall.
13 Nocton.
Present distribution unknown. There are no recent records for this moss.
- 1/28 *Sphagnum plumulosum* Röll.
S. acutifolium Ehrh. var. *subnitens* (Russ and Warnst.) Dix. and including
S. subnitens Russ and Warnst. var. *virescens* Warnst.
First record: Woodhall, 1910, Stow.
2 Manton, Scunthorpe.
* 5 Scotton.
10 Woodhall.
Locally common. Limited distribution.
Moorland hummock-builder.
- 1/30 *Sphagnum molle* Sull. Records for this moss in Lincolnshire are incorrect, see *Lincs. Nat. Union Trans.*, **9**, 166, (1937). There is a doubtful undated record by Gayfer for Scotton.

Records indicated thus (*) are substantiated by specimens in the Lincolnshire Naturalists' Union Bryophyte Herbarium at the City and County Museum, Lincoln.

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CORALROOT ORCHID (*CORALLORHIZA TRIFIDA* CHATEL.) IN YORKSHIRE

F. HOUSEMAN

In early June, 1961, I discovered a colony of this rare semi-saprophytic orchid in the Ribbleshead district. When news of the discovery became known, Mr. J. N. Frankland of Giggleswick reported that he had found a few specimens of the same orchid in an Austwick fen, in late May. It is a remarkable fact that this rare species hitherto unknown in Yorkshire should have been independently discovered in two different places within a few days and in both cases in areas often visited by botanists from all over Britain. At Ribbleshead about three dozen plants were found growing under *Salix cinerea* in a very damp situation. Nearby, where the ground was wet and spongy, a few more plants were seen in company with the following species.

<i>Ranunculus acris</i> L. <i>Caltha palustris</i> L. <i>Cochlearia alpina</i> Wats. <i>Lychnis flos-cuculi</i> L. <i>Geranium sylvaticum</i> L. <i>Lathyrus pratensis</i> L. <i>Geum rivale</i> L. <i>Angelica sylvestris</i> L. <i>Chrysanthemum leucanthemum</i> L. <i>Cirsium palustre</i> (L.) Scop.	<i>Primula farinosa</i> L. <i>Rumex acetosa</i> L. <i>Carex lepidocarpa</i> Tausch. <i>Carex nigra</i> (L.) Reichard <i>Thuidium tamariscinum</i> (Hedw.) B. & S. <i>Rhytidiadelphus squarrosus</i> (Hedw.) Warnst. <i>Climacium dendroides</i> (Hedw.) Web. & Mohr. <i>Hylocomium splendens</i> (Hedw.) B. & S.
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At the time of the discovery, most of the orchids were at their best and a few were in bud. They were slender, fragile and dainty, ranging from five to nine inches in height. They had pale ochre-coloured sheaths, their upper stems were pale green with loose spikes of six to a dozen pale greenish-yellow or greenish-white flowers, each with a white lip delicately marked with crimson. The coral-like rhizome was cream coloured, much branched and without roots.

Although there is no known printed record for the Coralroot orchid having been found south of North Lancashire, Cumberland and Northumberland, these discoveries in Yorkshire have brought to light two interesting items of information. There is a specimen of *Corallorhiza trifida* in the herbarium of the Royal Botanic Garden at Edinburgh, labelled 'Yorkshire, Nr. Harrogate, Comm. E. Young, 1838. Coll. 8/1838.' A note, in pencil, on the sheet says 'This locality is surely wrong: F.M.W.' No one seems to know who E. Young was, but the pencilled note by 'F.M.W.' is clearly Frederick Morgan Webb who was curator of the herbarium at the Edinburgh Botanic Garden from 1876 until his death in 1880. It is possible that the specimen was collected from near Harrogate and several suitable habitats in that area have been suggested to me.

Another possible Yorkshire specimen is an unlocalised one in the herbarium of The Yorkshire Philosophical Society purporting to have been collected by Leyland in 1847. The specimen is in the collection of Samuel Hailstone to whom it was evidently given by Leyland.

Robert Leyland (1784-1847) was a printer at Halifax and his herbarium is at the Belle Vue Museum, Halifax. Points in favour of his specimen being perhaps from Yorkshire are that he was a local man who does not seem to have travelled much and he died in 1847 so would have had little time to communicate his find. On the other hand it is just as likely to have been a specimen someone had given him. A search in Robert Leyland's own herbarium has so far proved fruitless as the collection is neglected, thick with dust and in no order, so one cannot be sure that all the orchids have been checked.

It is hoped that these notes will stimulate a search for this northern species in other suitable localities where it could previously have been overlooked and lead to its discovery elsewhere in the county.

I am indebted to Dr. W. A. Sledge for his generous assistance and Mr. G. A. Shaw for the identification of the mosses; and to Dr. F. H. Perring of Cambridge, Mr. J. E. Lousley, Miss C. M. Rob, Mr. F. Murgatroyd and the Regius Keeper (Dr. H. R. Fletcher) at the Royal Botanic Garden at Edinburgh for their valuable help with information regarding the herbarium specimens.

LEPIDOPTERA ON SPURN PENINSULA

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H. N. MICHAELIS

A visit to Spurn from September 10-17th, 1960, produced a few additions to the Lepidoptera listed in *The Entomology of the Spurn Peninsula* published in *The Naturalist* 1951-1954.

New species to the area are marked with an asterisk and notes are given on the status of a few species already listed.

Abbreviations: WBBB=Walker Butts Bank Dyke. KW=Kilnsea Warren.

CARADRINOIDEA

Gortyna flavago (Schiffermueller). Now found to be abundant among thistles and, apart from the second brood of *Amathes c-nigrum* (Linné), was the commonest Noctuid seen.

**Arenostola pygmina* (Haworth). Plentiful on WBBB. Food, grasses.

**Rhizedra lutosa* (Huebner). One, WBBB, Food, *Phragmites*.

**Hydraecia paludis* Tutt. Common on sugared ragwort flowers, WBBB. Is it a good species? I find difficulty in distinguishing between the genitalia of *H. paludis* of the salt-marsh and *H. lucens* Freyer of the inland mosslands.

**Agrochola lychnidis* (Schiffermueller). One, KW. Food, *Salix* and low plants.

**Conistra vaccinii* (Linné). Two at sugar, KW, an early date for a species which may prove plentiful later. Food, *Salix* and low plants.

Eumichitis lichenea (Huebner). Several seen at light, WBBB.

Tholera cespitis (Schiffermueller). Several at light, WBBB, KW.

**Scoliopteryx libatrix* (Linné). Three at sugar, KW. Food, *Salix*.

NOTODONTOIDEA

**Lygris testata* (Linné). Several among *Salix*, KW.

**Larentia cervicalis* (Scopoli). Two at light. Food, *Malva*.

**Notodonta ziczac* (Linné). Two larvae on *Salix*, KW.

PYRALOIDEA

**Crambus inquinatellus* (Schiffermueller). One, KW. Food, grasses. This is a surprising occurrence on sandhills though it is probably common inland.

**C. salinellus* Tutt. One, WBBB.

**C. selasellus* (Schiffermueller). Six, Marsh Meadow and WBBB. Though not found on previous visits, both the above species, which feed at the base of *Poa maritima* and other littoral grasses, were expected to occur.

TORTRICOIDEA

Peronea variegana (Schiffermueller). Now found to be common on KW. Food, *Rubus* and *Crataegus*.

Enarmonia rufillana (Westwood). Larvae abundant on seeds of *Daucus*.

**E. tenebrosana* (Duponchel), Scarce, bred, KW. The pink larva is found in rose hips and its presence is disclosed by a purplish suffusion at the base of the fruit or by frass extruded from a small hole.

TINAEOIDEA

Phthorimaea seminella Pierce and Metcalfe. Larvae abundant.

**P. instabilella* (Douglas). A few bred. About sixty moths of the above species were bred from mined seeds and leaves of *Suaeda maritima* and *Halimione portulacoides*; a possible third species as yet unidentified was present.

**P. costella* (Westwood). Three among *Solanum*, KW.

**Coleophora gryphipennella* (Bouché). Occasional larval cases on rose on road to saltings.

**Coleophora* species. Larval cases of the *annulatella-laripennella* group found on *Chenopodium* seeds but not bred.

C. therinella (Tengstroem). Larval cases plentiful on thistle, WBBB.

**Stigmella salicis* (Stainton). One bred from mines on *Salix*.

Since our last visit in 1953 when the bank of Walker Butts Dyke was raised and extended, the vegetation covering this bank has much increased. There is less

grass than formerly and *Aster*, *Daucus*, *Dipsacus*, *Senecio*, *Juncus* and other plants have increased. On Kilnsea Warren and the Main ridge, there is some deterioration due to the continued spread of *Hippophae rhamnoides* though the area north-west of the cottage is hardly effected by this shrub. The coast sandhills and land behind lying north-west of the Inn would be ideal for a further survey and is likely to yield more species than the narrow sandhill strip already surveyed.

Obituary

ALFRED HAZELWOOD

1913-1961

By the death of Alfred Hazelwood at the early age of 48 years, the Union (and many another organisation) has suffered a grievous loss which we profoundly regret. To the Ornithological Section the loss is almost irreparable. Not only had he attended meetings regularly since before 1940 (when he joined the Union), but his considerable and always growing knowledge of birds in the field, of skins and skeletons, of morphology and of racial forms, put him in a class by himself to whom we could turn with confidence when in difficulties. Always he replied quickly and cheerfully to queries concerning the bird casualties that we all came across. His findings were accepted knowing that his integrity would never let him give a completely definite answer unless he *knew*; but even an opinion, before forming which he exercised the utmost care, from him was invaluable. We can ill spare him indeed.

Born at Doncaster on April 3rd, 1913, Alfred Hazelwood matriculated at the Doncaster Grammar School, had two years' studentship attached to the Bird Room of the British Museum (Natural History) before taking up duty as an assistant at the Doncaster Museum and Art Gallery. In 1935 he was appointed assistant curator at the Bolton Museum, becoming curator of the Museums and Art Gallery in 1957. He married Ellen Gallwey (who was then assistant to Dr. T. W. Woodhead at the Tolson Memorial Museum, Huddersfield) in 1939. From 1941 to the end of the War he was Lieutenant R.N.V.R. and used his eyes ornithologically while serving in northern waters. He noted that migrating birds flying under the lee of his ship, followed the turns of the boat as evasive action was taken against submarines. Back in civilian life in 1946 he became a member of the Y.N.U. Executive, President of the Joint Vertebrate Sections, and President of the Union in 1958.

Hazelwood joined The British Ornithologists' Union in 1935, becoming a member of the B.O. Club and contributing notes to the programmes and to *The Bulletin* occasionally. *British Birds* recognised his attainments by including him on its Rarity Records Committee in June, 1959, where he helped to assess many Yorkshire (and other) occurrences.

In the county to which Alfred's profession took him, he was known in every branch of natural history, was a member of the Lancashire and Cheshire Fauna Committee, and Hon. Vice-President of the Bolton Field-Naturalists' Society. When the Curatorship of the Bolton Museum became vacant, so well were his qualities known that his election was unchallenged. Responsibility came to him for re-organisation of the Art Gallery; and recently he was concerned with a museum for cotton machinery. For 1961 he was President of the North-western Museums Federation. A minor but real interest that exemplifies the versatility of this specialist concerned village cricket: from 1959 he was chairman of the Bradshaw Cricket Club.

At first, Alfred Hazelwood usually gave an appearance of diffidence; but in ornithological company his quality soon asserted itself. He made an excellent chairman and always spoke with point and wit. He had a polished style of writing and was never dull; many of his reviews of books in *The Naturalist* are good examples of terse yet penetrating comment. I have seen him grow from boyhood to eminence, although I was seldom in the field with him, perhaps because our paths, although intersecting, lay in different sides of the ornithological field. To a suggestion that his help would be useful he was always courteously responsive. He would have made an excellent Editor of *The Naturalist*, which position, early in 1961, he had accepted for 1962. It was not to be, to the great regret of us of the Ornithological Section. After a long illness he passed away on December 7th, 1961. His widow is President of the Y.N.U. for 1962. Our thoughts and deep sympathies go out to her and to her daughter and three boys.

R.C.

YORKSHIRE NATURALISTS' UNION EXCURSIONS IN 1961

SLAIDBURN, V.C. 64, Whitsuntide, May 20th-22nd.

Before the days of private transport Bowland was one of the least accessible areas in Yorkshire and on that account and the limited accommodation available it has rarely been visited by the Union. The only meetings which had previously been held in Bowland proper were in 1896 and 1909.

Fine if rather chilly weather prevailed throughout the week-end and the Hark to Bounty Inn more than compensated for its limited bedroom accommodation by its splendid catering. One of the interesting comparisons between this and the excursion folder for the first meeting here is that tea, bed and breakfast at the same Inn in 1896 cost 4/6!

The excursions were well planned to cover three different types of country. On Saturday the area about Stocks Reservoir was investigated; on Sunday the party explored the valley north of Dunsop Bridge to Whitendale, and on Monday Dunning Wood and its limestone cliff and the country about Newton were worked.

The well-attended gathering for reports which terminated the proceedings was held in the Court Room of the Inn. Mr. Chislett presided. Twelve societies were represented. Over twenty new members were elected at the meeting which ended with votes of thanks to the landowners for permission to visit their estates and to Mrs. Duncan for the very thorough and competent arrangements both before and during the excursion which did so much to ensure the success of the meeting.

Ornithology (R. Chislett): Eighty-two species were identified, a large number even for a week-end meeting, and 26 more than were recorded for the area at the meeting in 1909. The making of the Stocks Reservoir since then has led to the addition of such species as Great Crested and Little Grebes, Mallard, Teal, Red-breasted Merganser, Moorhen, Oystercatcher, and breeding Black-headed Gulls; whilst five Common Terns were seen flying over. Predatory species seen included Buzzard (one), Sparrow-Hawk (one), and Kestrel, and Barn, Little, Tawny and Short-eared Owls. The stream sides contributed Dipper (feeding young), Common Sandpiper, Grey and Pied Wagtails (with Yellow Wagtails in the meadows). Waders included many Lapwings (mostly with eggs but four young ringed), Snipe, Curlew (fairly numerous, nest found) and Redshank. With the *ridibundi* following ploughs were Lesser Black-backed Gulls, a few Herring Gulls, and at least one Greater Black-backed—no doubt visitors from the well-known gullery on the county boundary in the hills.

Cuckoos were scarce, as were Kingfishers, Wheatear, and all warblers excepting Willow Warbler, Whitethroat and Garden Warbler. Other species noted were: Heron (one), Grouse, Partridge, Pheasant, Stockdove, Swift, Skylark, three Hirundines, Carrion Crow, Rook, Jackdaw (numerous), and Magpie; Great, Blue, Coal, Marsh and Long-tailed Tits; Tree-Creeper, Blackcap, Whinchat (fairly numerous) Redstart, Wood-Warbler, Meadow and Tree Pipits, Greenfinch, Goldfinch, Linnet, and Lesser Redpoll, Bullfinch, Chaffinch, Yellow-Hammer, Tree-Sparrow and the generally ubiquitous Turdidae, etc.

Mammals seen were: Hare, Rabbit (fairly numerous, and no evidence of myxomatosis), Hedgehog, Mole, Fox (killed by keeper), Stoat, Bank Vole, and a small bat probably a pipistrelle.

Conchology (E. M. Morehouse): The list of molluscs found in the Slaidburn area, compiled by W. Denison Roebuck was a comprehensive one, and during the intervening 76 years very little work seems to have been done in this district. Around Stocks Reservoir no record was made.

The fells and ground to the north of Dunsop were not productive, only two molluscs and five slugs were noted, these being *Vitrea cellaria* Müll., *V. alliaria* Mill., *Agriolimax agrestis* L., with the varieties *albiventaculata* Dem. & Mort., and *reticulata* Müll., *Limax maximus* L., and *Milax sowerbii* v. *alba* Taylor (keeled).

At the foot of the calcareous rocks in the garden at Dunning Park the following were found: *Clausilia bidentata* Ström., *Hygromia rufescens* Penn., *Pyramidula rotundata* Müll., *Vitrea cellaria* Müll., *V. alliaria* Mill., *V. pura* Alder., *Cochlicopa lubrica* Müll., *Carychium minimum* Müll., *Agriolimax agrestis* L., and the varieties *reticulata* Müll., and *pallida* Picard, *Arion ater* L., and the varieties *brunnea* Roebuck and *hortensis* Fér., and *Milax sowerbii* Taylor.

Between Newton and Slaidburn *Helix nemoralis* L. (dead), *H. hortensis* Müll. and *Arianta arbustorum* L. were seen.

Flowering Plants (W. A. Sledge): The underlying rocks of the Bowland area are mostly Millstone Grit, shales or shales with limestone. About Stocks Reservoir the vegetation is indicative of grit or drift-covered rocks and the ground traversed on this excursion was mostly pasture land or recently planted woodland. The species noted were nearly all commonplace members of such terrain and the shores of the reservoir on the eastern and south-eastern sides are too exposed to provide any interesting aquatic communities. In one area near the reservoir *Trollius europaeus* (Globe Flower) was abundant and at its best. Several plants of *Aquilegia vulgaris* (Columbine) were seen in a hedge *en route* to the reservoir, no doubt garden escapes or planted originally but now completely naturalised. *Saxifraga granulata* (Meadow Saxifrage) was also noted on the way to the reservoir and on this and the other excursions *Cardamine amara* (Large-flowered Bittercress) was repeatedly encountered. The continuous white banks of *Myrrhis odorata* (Sweet Cicely) bordering the roadside nearer to Slaidburn made a wonderful show and on the same roadside bank a puzzling and undetermined *Symphytum* (Comfrey) was noted. Pistillate plants of Butterbur, *Petasites hybridus*, are plentiful by the river about Slaidburn.

The valley running north from Dunsop Bridge to Whitendale which was investigated on the Sunday excursion, has a restricted flora typical of grit rocks and peat-covered slopes. The most notable species here is *Wahlenbergia hederacea* (Ivy-leaved Bellflower) which is plentiful, occurring intermittently by the stream over a considerable distance. *Drosera rotundifolia* (Sundew), *Vaccinium oxycoccos* (Cranberry) and *Narthecium ossifragum* (Bog Asphodel) were seen in bogs and *Equisetum telmateia* (Giant Horsetail) was found lower down the valley. *Thelypteris oreopteris* (Mountain Fern) and *Dryopteris borleri* (Golden Male Fern) were plentiful amongst the grit rocks higher up the valley. The alien willow-herb *Epilobium nerterioides*—a fairly recent arrival here—is now abundant in the shingle of the stream bed.

The excursion to Dunsop Wood on Monday was of particular interest as here the main limestone is exposed forming a considerable cliff and this locality formerly yielded a number of calcicolous species some of which are unrecorded elsewhere in Bowland. The late J. F. Pickard who lived at the Heaning near Newton from 1891-97 worked the Bowland flora assiduously and his notes on the Dunsop area are detailed. A comparison of the present flora with that recorded 65 years ago was therefore of great interest. In the 1896 circular Pickard stated the 'Dunsop cliff and wood have a large variety of limestone plants such as *Helianthemum vulgare*, *Potentilla verna*, *Viola hirsuta*, *Rhannus catharticus*, *Euonymus*, *Scabiosa columbaria*, *Agrimonia eupatoria*, *Gentiana autumnalis*, *Paris*, *Convallaria*, *Cystopteris*, *Scolopendrium*, etc.' In the later circular (1909) the *Potentilla* appears as *P. alpestris* and *Verbascum thapsus* and *Sedum fabaria* were added to the species list. On this (1961) occasion only Buckthorn, Spindle Tree, Scabious, Orpine and the two ferns were observed of those species listed by Pickard. The wood itself is thickly carpeted with *Mercurialis* (Dogs Mercury) and whilst Herb Paris and Lily-of-the-Valley may have been overlooked there can be little doubt that a considerable change has occurred here due to the increased shade resulting from over half a century of tree growth. A manuscript note of Pickard's referring to a return visit in 1926 states that 'the small patch of *Potentilla alpestris* with some of its familiar associates was nearly gone and non-flowering for lack of sun and light.' Only a small part of the cliff top is now fully exposed and suitable for the growth of the *Potentilla* or *Helianthemum* (the latter stated in an earlier manuscript note of Pickard's to be 'common at top of Dunsop Cliff') and a careful search of this area yielded negative results.

The earlier circular also states that 'most of the moist meadows and pastures yield *Primula farinosa*, *Valeriana dioica*, *Pinguicula*, *Triglochin*, *Habenaria conopsea*, *Sagina nodosa*, *Pedicularis sylvatica* and *Equisetum sylvaticum*.' With the exception of the valerian, not one of these species was observed throughout the week-end. The only suitable situation encountered was a marshy meadow near the Heaning west of Newton. Pickard recorded *Primula farinosa* from here but no plants were observed on this occasion though *Ophioglossum vulgatum* (Adder's Tongue Fern), *Crepis paludosa* (Marsh Hawksbeard), *Salix pentandra* and *Carex acutiformis* were noted here. Other species seen by the Hodder near Newton included, *Trollius europaeus* (Globe Flower), *Hesperis matronalis* (Dame's Violet), *Mimulus guttatus* (Monkey

Flower) and *Salix pentandra* (Bay-leaved Willow). On roadside banks and in hedges beyond Newton *Arabis hirsuta* (Hairy Rock-cress), *Hypericum maculatum* (St. John's Wort), *Pimpinella major* and *Salix purpurea* (Purple Willow) were seen. *Botrychium lunaria* (Moonwort) was seen at Dunnow and on walls, banks and hedges in many places about Slaidburn and Newton *Arabis thaliana* (Thale Cress), *Geranium lucidum* (Shining Cranesbill), *Prunus padus* (Bird Cherry) and *Cymbalaria muralis* (Ivy-leaved Toadflax) were conspicuously plentiful. *Cirsium heterophyllum* (Melancholy Thistle) was seen in two places near Slaidburn and some members of the party who visited the moorlands on Croasdale Fell saw *Rubus chamaemorus* (Cloudberry) and *Andromeda polifolia* (Marsh Rosemary).

The recording work during the week-end resulted in 34 additions being made to the Slaidburn square and 57 additions to the Dunsop Bridge square bringing their totals to 356 and 313 respectively.

Nomenclature follows Dandy's *List of British Vascular Plants*.

Bryology (G. A. Shaw): The limestone cliffs at Dunnow were not very rich in mosses. *Neckera crispa* and *Anomodon viticulosus*, though present in small amount, were poorly grown and nothing like so luxuriant as is often the case in Craven. Where a little moisture was seeping out at the cliff base there was *Eucladium verticillatum* and *Reboulia hemisphaerica*. Other species seen about here included:

Fissidens bryoides Hedw.
F. cristatus Wils.
Trichostomum brachydontium Bruch.
Pohlia nutans (Hedw.) Lindb.
Bryum pallens (Brid.) Rohl
Mnium longirostrum Brid.
Climacium dendroides (Hedw.) Web. & Mohr.

Homalia trichomanoides (Hedw.) B. & S.
Thamnum alopecurum (Hedw.) B. & S.

Quite different habitats were found along the valley of the Langden stream above Dunsop Bridge, the head of which valley is the most westerly portion of the county. Here no limestone is present, the terrain for the most part consisting of dry heather moor, with a few rocky outcrops near the stream. The bryophytes seen here were:

Atrichum undulatum (Hedw.) P. Beauv.
Polytrichum aloides Hedw.
P. juniperinum Hedw.
Dicranella heteromalla (Hedw.) Schp.
D. squarrosa (Starke) Schp.
Rhabdoweisia denticulata (Brid.) B. & S.
Dichodontium pellucidum (Hedw.) Schp.
Dicranum majus Turn.
Leucobryum glaucum (Hedw.) Schp.
Encalypta streptocarpa Hedw.
Funaria hygrometrica Hedw.
Tetraphis pellucida Hedw.

Cratoneuron filicinum (Hedw.) Roth
Acrocladium cuspidatum (Hedw.) Lindb.
Brachythecium rutabulum (Hedw.) B. & S.
Eurhynchium praelongum (Hedw.) Hobk.
Pleurozium schreberi (Brid.) Mitt.
Ctenidium molluscum (Hedw.) Mitt.
Rhytidiadelphus squarrosus (Hedw.) Warnst.

Lophocolea bidentata (L.) Dum.

Bryum pallens (Brid.) Rohl
Mnium hornum Hedw.
Philonotis fontana (Hedw.) Brid.
Fontinalis antipyretica Hedw.
Cratoneuron filicinum (Hedw.) Roth
Isoeterygium pulchellum (Hedw.) Jaeg. & Sauerb.

Plagiothecium undulatum (Hedw.) B. & S.
Hypnum cupressiforme Hedw.
Rhytidiadelphus squarrosus (Hedw.) Warnst.

Pellia epiphylla (L.) Corda

GUNTHWAITE, V.C. 63, June 3rd

Gunthwaite lies in an attractive valley stretching from the edge of the moors to parkland at Cawthorne. The woods, streams, bogs and the dam provided a variety of habitats. The weather was ideal, fine but not too hot and the excursion was enjoyed by everyone present.

About twenty members met in the morning and split into groups, the majority making for the dam where some interesting ground was investigated. Those joining the party for the afternoon, met at Daking Brook; amongst these were members of the Barnsley Naturalists' including a good number of junior members.

Tea was provided and served by members of the Barnsley Society and over 50 were present for this and the meeting which followed, at which Mr. Chislett presided. Eleven affiliated societies were represented. Votes of thanks were moved to the landowners, to the Barnsley Society for their much appreciated hospitality and to the Divisional Secretary, Mr. R. S. Atkinson, for all he had done to make the meeting the success it was.

Ornithology (R. Chislett): The valley in which Gunthwaite lies was modestly described in the circular as attractive. It is part of a wide and pleasant stretch of hills and valleys receding backward to the moors, that is seldom visited by naturalists excepting those residents in the nearest towns; Barnsley, Penistone, Holmfirth, Huddersfield, Halifax, etc., from which the good attendance of members was mainly derived. Most of our time was spent about the dam in the bottom of the valley where Little Grebe, Coot, Grey Wagtail and Reed-Bunting occurred, and in the woods above where birds noted included Great Spotted Woodpecker, Tawny Owl, Tree-Creeper, Redstart, Blackcap, Whitethroat, Spotted Flycatcher, Tree-Pipit and Bullfinch, and a black-capped tit considered to be Willow-Tit, although both species probably occur. Other species noted included Kestrel, Moorhen, Lapwing, Curlew and Cuckoo, all rather scarce; Skylark, Swift, Swallow, House-Martin, all five commonest members of the crow family, Great, Blue, and Long-tailed Tits Mistle-Thrush and numerous Wood-Pigeons, Blackbirds, Song-Thrushes, Willow-Warblers and Chaffinches; fewer Robins, Hedge-Sparrows and Pied Wagtails, Starlings in parties, and rather scarcely, Linnet, Yellow-Hammer and Corn-Bunting. A visit to Ingbirchworth Reservoir in the afternoon added Heron, Mallard, Meadow-Pipits, and an interesting colony of Tree-Sparrows. A Chiffchaff heard as we came to Cawthorne for tea, *via* Heffer Wood, brought the total of birds identified during the day to the respectable figure of 53.

Entomology (J. H. Flint): The day was very suitable for collecting insects and in the orders collected a fair sample of the species to be expected in this sort of locality was produced but with nothing very outstanding. Most collecting was done in the area around the dam at Gunthwaite. The large sawflies were much in evidence in the sunshine and examples of *Tenthredo arcuata* Först., *T. celtica* Benson, *T. atra* L., *T. mesomelas* L. and *Tenthredopsis nassata* (L.) were taken by several members. I found Dolerines to be not uncommon, particularly in marshy ground, and those taken were *Dolerus picipes* Klug, *D. aeneus* Hart., *D. nigratus* Müll., *D. haematodes* Schr., *D. cothurnatus* Lep. and *Loderus vestigialis* (Klug). A specimen of *Nematus oligospilus* Först. was swept from willow (? *S. fragilis*).

Butterflies were scarce and only the Wall, Small Copper and Orange Tip were reported. Only one damselfly, the common *Enallagma cyathigerum* (Charp.) was seen. Thirty-four species of beetle were recorded. Among them the large, purple click-beetle, *Corymbites cupreus* v. *aeruginosus* (F.) was conspicuous in flight, but apart from an abundance of *Galerucella nymphaeae* (L.) in the marsh above the dam nothing worthy of note was seen. A specimen of *Cyclus caraboides* v. *rostratus* (L.) was taken by a young visitor. Heteroptera were few and Homoptera were unremarkable although among those seen were the fine *Cercopis vulnerata* Germ., *Criomorphus albomarginatus* (Curt.) and *Delphacodes albofimbriata*, the last named being new to V.C. 63 and only the second example recorded in the country. The hover flies taken by Mr. Crossley included *Platychirus manicatus* (Mg.), *P. albimanus* (F.), *Melanostoma mellinum* (L.), *Syrphus ribesii* (L.), *S. venustus* (Mg.), *Rhyngia campestris* (Mg.) and *Neoscia podagria* (F.).

Several members have contributed records or shown specimens to me on which some of these notes are based and my wife identified most of the sawflies for me. To all these people I express my thanks.

Note: The reference in the circular to the Fritillary butterfly should have read *Argyris aglaia* (Dark Green Fritillary) and not *A. lathonia*, and the common name of *Epirrhoe tristata* is Small Argent and Sable and not Common Carpet. Apologies are due to Mr. Seago for these unfortunate errors, for which he was not responsible, in his notes on Lepidoptera in the excursion circular.

Conchology (E. Thompson): Though only two conchologists were present at the start of the meeting, these two did some good work and increased the local list to thirteen species.

After searching some time in an overgrown pond, a number of *Pisidium* shells were found deep in the mud around the roots of water plants. In the dam *Paludestrina jenkinsi* Smith was present in large numbers along with *Ancylus fluviatilis* Müll. Here not a single *Planorbis* snail was found.

Next an old wall was visited where *Clausilia bidentata* Ström. was in large numbers, a good shell for this acidic district. Beneath leaves and stones at the foot of the wall a few *Pyramidula rotundata* Müll. were found also *Zonitoides nitidula* and *Vitrea alliaria* Müll. Other shells were *Helix nemoralis* L. and *Vitrina pellucida* Müll.

Mr. E. Robinson completed the day by finding a large colony of *Succinea putris* L. in a marshy field. Both workers were well pleased with the area. Three species of slugs were represented by *Arion ater* L. and var. *brunnea* Roebuck, *Limax maximus* L., and *Agriolimax agrestis* L. with var. *reticulata* Moq.-Tand and var. *sylvatica* Moq.-Tand.

Botany (M. M. Sayer): Official representation of the Botanical Section was not as good as it has been at recent meetings, though the deficiency was made up by a good party of botanists from Barnsley. By splitting up into small groups a good deal more ground was covered than if the party had worked as a whole. The dam at Gunthwaite was the centre of the area, and although no great rarities were found or new records made, the day was enjoyed by everyone.

The area worked provided a good example of Millstone Grit flora in a lowland area, and it was gratifying to find such very pleasant country so near to Huddersfield and other large towns. Most of the species mentioned on the circular were seen including *Genista tinctoria* (Dyer's Greenweed) which had not been reported since 1953. The most notable additions were *Adoxa moschatellina* (Moschatel), *Veronica montana* (Mountain Speedwell), *Ranunculus hederaceus* (Ivy-leaved Crowfoot), the sedge *Carex curta* and the two ferns so often overlooked *Botrychium lunaria* (Moonwort) and *Ophioglossum vulgatum* (Adder's tongue).

A cursory glance at the B.S.B.I. mapping master card for the 10 km. square showed there were many gaps to be filled (not a single sedge had been recorded) and we were able to add 51 species to the 282 already listed.

SLEIGHTS for FYLINGDALES, V.C. 62, June 17th

About twenty-eight members attended the day meeting at Sleights. The weather was good and while the excursion proved very enjoyable, from the naturalists' angle the day was not rewarding. The ground covered had been forbidden territory for more than twenty years and hopes that this would have given plants and animals time to increase, or for new species to have come in were not realised. Although the clearance of unexploded ammunition had been completed, the party was warned to keep to recognised paths and marked areas, which curtailed the wanderings of at least some of those present. The few adventurous people who did wander into the more remote area around the gull pond and Biller Howe found little to reward them except a large Adder. There was an air of desolation over much of the ground covered, but by the May Beck things look more hopeful and may in the course of years recover to some extent. Nine affiliated Societies answered the roll-call at the meeting held after tea. Mrs. Morehouse presided in the absence of any Vice-president.

A vote of thanks to the landowners, the War Department, was moved by Miss Rob, who also thanked the Divisional Secretary, Mr. Lawrence for organising the excursion. Mr. Lawrence asked that a hearty vote of thanks be given to Mr. Burnham and the Whitby Field Club, who had acted as hosts for the day and made many of the arrangements.

Ornithology (C. E. A. Burnham): Twenty-five years ago the upper part of the Maybecks valley was visited only by a few local folk. One remembers the sheep-cropped turf near the bridge at the confluence of becks, the jaunty flash of Grey and Pied Wagtails by the waterfall, the certainty of a Dipper's nest in the culvert upstream, the sizzling of the mixed grill over a wood fire amid the churning Nightjars and the roding Woodcock. Years of military occupancy have changed much. The turf has yielded to a concrete parking area, the culvert is damaged, the Dippers and Woodcock gone. The upper reaches still retain some of their former charm: Redstart, Tree-Pipit, Whitethroat and Whinchat are present. A pair of Swallows had five eggs above an inner doorway of a military hut. Less charming were the two nests of Carrion Crow, one containing two young and the other certainly tenanted, which occupied typical sites in beckside alders near the head of the slack.

The moor above is only beginning to recover, and the ling in general is too short to shelter anything but Meadow Pipits and Skylarks. Not a single Grouse or Pheasant (and this in a good year for both species) was recorded. Curlews are scarce, Golden Plovers absent, Lapwings also until we reach the reedy areas beyond. The scant cover and the quartering crows and gulls explain this.

The wet ground of Biller Howe Slack produced only distant views of two Mallard in flight. In the tributary channel to the north we flushed a Snipe. Foul Sike has its colony of Black-headed Gulls, 50-100 adults, some of their nests with eggs, 20 or

more of their downy young swimming near the far shore. Five Teal were in flight; evidently they still breed here.

Those ornithologists who worked the valley woodlands by Falling Foss and the sheep-stray above were responsible for most of the 43 species recorded during the day. Most interesting of their finds were Wheatear (poorly represented locally, but believed to be increasing) and Nightjar, flushed near a moorland plantation.

An adder and common lizard were seen during the afternoon.

Flowering Plants (M. E. Bradshaw): The route followed was from Redgate Corner to May Beck, then up the May Beck, across the moor via the whinsill dyke to Blea Hill Beck then north along the old Robin Hoods' Bay track to the overflow channel west of Biller Howe Dale, thence to the gull pond and across the moor via the shooting house back to the cars, parked by the plantation on the road over Sneaton Low Moor.

Much of the summit plateau of Fylingdales moor is an uninspiring acid desert of *Calluna vulgaris* (known as ling in this part of Yorkshire), *Erica tetralix* (Cross-leaved Heath), *Trichophorum cespitosum* ssp. *germanicum* (Deer-grass), *Juncus effusus* (Common Rush) (mainly the var. *compactus*), *J. squarrosus* (Heath Rush), *Empetrum nigrum* (Crow-berry), *Vaccinium myrtillus* (Bilberry), and *Deschampsia flexuosa* (Wavy Hair-grass). Even so, much of interest was found by seeking out the wetter places. The numerous wet flushes have a comparatively rich flora which misleadingly suggests calcareous springs; in fact they are markedly acidic and the pseudotufa deposits are formed of out-washed soft rock. The species found in many of these flushes include: *Ajuga reptans* (Bugle), *Anagallis tenella* (Bog Pimpernel), *Carex demissa* (Yellow Sedge), *C. echinata* (Star Sedge), *C. nigra* (Common Sedge), *Drosera rotundifolia* (Sundew), *Eleocharis quinqueflora*, *Equisetum palustre* (Marsh Horse-tail), *Hydrocotyle vulgaris* (Pennywort), *Luzula multiflora* (Woodrush), *Lychnis flos-cuculi* (Ragged-Robin), *Mentha aquatica* (Water Mint), *Prunella vulgaris* (Self-heal), *Potamogeton natans* (Floating Pondweed), *Triglochin palustre* (Arrow-grass) and *Valeriana dioica* (Marsh Valerian).

After lunch, a small party of botanists crossed over the moor to Blea Hill Beck, via the whinsill dyke. *Aira praecox* (Hair-grass) and *Rumex tenuifolius* (Narrow-leaved Sheep's Sorrel) were found on the open ground near the dyke. A water-filled bomb crater contained *Juncus bulbosus* ssp. *fluitans*. The large flush near 'John Bond's Sheephouse' had most of the species mentioned above plus *Myrica gale* (Bog Myrtle), *Narthecium ossifragum* (Bog Asphodel), *Vaccinium oxycoccos* (Cranberry), *Carex dioica* and *Selaginella selaginoides*.

From here the party worked upstream and across an area dominated by *Molinia caerulea* and *Juncus effusus* to the Robin Hood's Bay track and along to Biller Howe Dale slack. The upper part of this overflow channel is a good, wet bog with many pools. This was searched (by those who did not mind wet feet) for *Listera cordata* (Lesser Twayblade) but without success. Cranberry was flowering well, other species included *Narthecium ossifragum* (Bog Asphodel), *Drosera rotundifolia* (Sundew), *Menyanthes trifoliata* (Bogbean), *Eriophorum angustifolium* and *E. vaginatum* (Common and Hare's tail Cotton-grass), *Calluna* and *Erica tetralix*, *Carex nigra* and *C. rostrata* (Bottle Sedge). A large pool surrounded by *Carex rostrata* and a little *Potentilla palustris* (Marsh Cinquefoil) contained *Eleocharis fluitans* (Floating Scirpus) and *Eleocharis multicaulis*.

The return route was via the gull pond, over the heather moor to the shooting house, and on to the cars.

Nomenclature follows Dandy's *List of British Vascular Plants*.

Bryology (H. Ingram): The following Bryophytes were collected during the day:

<i>Sphagnum papillosum</i> Lindb.	<i>Orthodontium lineare</i> Schwaegr.
<i>S. recurvum</i> P. Beauv.	<i>Pohlia nutans</i> (Hedw.) Lindb.
<i>S. rubellum</i> Wils.	<i>Bryum pallens</i> (Brid.) Röhl
<i>Polytrichum juniperinum</i> Hedw.	<i>Mnium hornum</i> Hedw.
<i>P. commune</i> Hedw.	<i>Aulacomnium palustre</i> (Hedw.)
<i>Ditrichum heteromallum</i> (Hedw.) E. G.	Schwaegr.
Britton	<i>Philonotis fontana</i> (Hedw.) Brid.
<i>Dicranella heteromalla</i> (Hedw.) Schp.	<i>Cratoneuron commutatum</i> (Hedw.) Roth
<i>Dicranum scoparium</i> Hedw.	<i>Campyllum stellatum</i> (Hedw.) Lange &
<i>Leucobryum glaucum</i> (Hedw.) Schp.	C. Jens.

Scorpidium scorpioides (Hedw.) Limpr. *Marchantia polymorpha* L.
Acrocladium cuspidatum (Hedw.) Lindb. *Riccardia pinguis* (L.) S. F. Gray
Plagiothecium undulatum (Hedw.) B. & S. *Pellia epiphylla* (L.) Corda
Conocephalum conicum (L.) Dum. *Odontochisma sphagni* (Dicks.) Dum.

NEWTON-UPON-DERWENT, V.C. 61, July 2nd

The weather did not favour the Union on this occasion. After a very wet night, the party left the meeting place in fine though dull conditions but before the short walk from the cars to Sutton wood had been completed the rain started again and it was one of the wettest East Riding meetings on record. In spite of the weather however, the meeting was a success and had the day been fine there is no doubt this would have been of great natural history interest.

Some 35 members attended at some part of the day and although one or two abandoned the attempt to cover the course most carried on through the heavy rain and attended the meeting held, as usual, after tea. Fourteen affiliated Societies answered the roll-call and the Hull Society turned up in strength with a good number of keen young members including some entomologists—a very welcome addition to the meeting. The juniors from Tees-side also made the long journey to be present.

The chair was taken by Mr. R. Chislett and the vote of thanks to the landowners the Forestry Commission, was moved by Mr. Gravett. Miss Crackles, the Divisional Secretary, was thanked by the General Secretary, Miss Rob, on behalf of all who had attended the meeting.

Ornithology (R. Chislett): After a very dry, late spring, July 2nd was wet until late afternoon. Time was used in Sutton Wood and by the river; and by and on adjacent Allerthorpe Common. Undergrowth was long and waterlogged and progress through it was slow and unpleasant. For periods both naturalists and birds kept silent under cover; and the list of species suffered. In the woods, Wood-Pigeons and Turtle Doves, Blackbirds and Thrushes, Blackcaps and Willow Warblers and Bullfinches were very noticeable in places; with Cuckoos, Jay, Tawny Owl, Green Woodpecker, Tree-Creeper and Tree-Pipit only noted singly. Some Skylarks sang. Corn-Buntings probably had young. Other species that made up the total of 46 identified were: Mallard, Moorhen, two species of Partridge, Pheasant, Lapwing, Snipe (still drumming), Curlew, Nightjar (heard by a member during the previous night on the Common), Swift, Swallow, Carrion Crow, Rook, Daw, Magpie, Great, Blue and Long-tailed Tits, Wren, Robin, Sedge-Warbler, Whitethroat, Hedge-Sparrow, Starling, Greenfinch, Linnet, Chaffinch, Yellowhammer, Reed-Bunting, Tree and House-Sparrows.

Lepidoptera and Coleoptera (Roger L. Kitching): The day, being wet, was not as great a success, entomologically speaking, as might have been expected under better conditions; however it was not entirely unsuccessful although the results were limited.

On arrival at the Barmby New Inn we started well by taking one of the Pteraphoridae, *Mucita pentadactyla*. Several specimens were taken, all freshly emerged apparently from pupae on the abundance of nearby convolvulus which is the food plant of the larvae. Reassured by this early success, we scoured the grass verge by the inn and were rewarded by finding an abundance of the very common larvae of *Callimorpha jacobaeae* (Cinnabar Moth) unmistakable in their bright colours and feeding as they were on ragwort.

The party now proceeded to Sutton Wood and it was at this point that the heavy rain started and entomologists resigned themselves to a period of relative inactivity. Only two specimens were seen; one *Maniola jurtina* (Meadow Brown butterfly) flying and one of the large black coleoptera, *Feronia niger* under a fallen log.

Later in the day we went on to Allerthorpe Common and here, in spite of the continued bad weather we met with a little more success and several species were noted. In previously planted traps we found several dead Coleoptera specimens including *Carabus violaceus*, *Cicindela campestris*, *Harpalus aeneus* and *Feronia modicus* as well as several smaller species. Of the Lepidoptera noted, specimens of *Ematurga atomaria* (Heath moth) and *Zanthorhoë fluctuata* (Common Carpet) were taken and *Maniola jurtina* and *Epirrhoë tristata* (Small Argent and Sable) were seen along with several of the larger Plusiidae.

One can thus conclude that, although this outing was not the greatest of successes, this area, given better weather conditions, holds good promise for entomologists due to the abundance of suitable vegetation.

Flowering Plants (E. Crackles): In spite of conditions, most of the species mentioned in the circular for the Sutton Wood area were confirmed and some additional records made. The most important additional record was for *Carex curta* which has been noted in East Yorks. only on one previous occasion and that not recently. Species noted included: *Viola palustris* (Marsh Violet), *Hypericum pulchrum* (Slender St. John's Wort) in very fine flower, *Cerastium glomeratum* (Sticky Mouse-ear Chickweed), *Spergula arvensis* (Corn Spurrey), *Oxalis acetosella* (Wood Sorrel), *Vicia hirsuta* (Hairy Tare), *Epilobium obscurum*, *Rumex tenuifolius*, *Lysimachia nemorum* (Yellow Pimpernel), *Lycopsis arvensis* (Small Bugloss), *Calystegia sylvestris* (Larger Bindweed), *Scrophularia nodosa* (Knotted Figwort), *Veronica officinalis* (Common Speedwell), *Campanula latifolia* (Giant Bell Flower), *Senecio sylvaticus* (Wood Groundsel), *Gnaphalium uliginosum* (Marsh Cudweed), *Carduus crispus* (Wetted Thistle), *Juncus bufonius* (Toad Rush), *J. bulbosus*, *Luzula pilosa* (Hairy Woodrush), *L. multiflora* (Many-headed Woodrush), *Carex binervis*, *C. pilulifera*, *C. remota*, *C. ovalis*, *Holcus mollis*, *Calamagrostis epigejos*, *Agrostis canina* and *Milium effusum*. By the river, large beds of *Carex acutiformis* were noted and *Petasites fragrans* (Winter Heliotrope) was seen in Sutton-on-Derwent.

Allerthorpe Common was visited in the afternoon. The most notable species seen here were: *Teesdalia nudicaulis* (Shepherd's Cress), *Hypericum elodes* (Marsh St. John's Wort), *Drosera rotundifolia* (Sundew), *Anagallis tenella* (Bog Pimpernel), and *Cirsium dissectum* (Meadow Thistle). Important additional records for the Common are *Peplis portula* (Water Purslane) and *Glyceria declinata*. The latter plant had not previously been noted in the vice-county. Other species noted included: *Potentilla palustris* (Marsh Cinquefoil), *Veronica scutellata* (Marsh Speedwell), *Carex nigra* and *C. demissa*.

Nomenclature follows Dandy's *List of British Vascular Plants*.

SEDBERGH, V.C. 65, July 15th-16th

About twenty-eight members attended the last general field meeting of the year. On the occasion of the last meeting here in 1938, the weather prevented the investigation of Needlehouse Gill, the remote side valley of the river Rawthey which forms the boundary between Westmorland and the West Riding (this part of V.C. 65 being in West not North Yorkshire). Once again the attempt to get up the Gill was prevented by heavy rain, which made serious work impossible; the only comfort was the sight of Uldale Force and the many tributary becks in raging spate. Every stream was a waterfall and in one place a very impressive stream spouted, fountain-like, from the hillside, where in normal weather a mere trickle of water is the rule. In spite of the rain about twenty members made the trip up to Uldale and on the way back were entertained to tea at Needlehouse by Mrs. and Dr. Helga Frankland. Never was tea and a warm room more appreciated.

Sunday began with cloud and the promise of further rain but by the time the party had reached the parking space at Cautley, the sun was out and the day remained fine and sunny. The river had fallen nearly two feet, but there was still a fairly heavy head of water coming over the Spout making it difficult to get to some of the more interesting rocks. The general wet conditions were very good for mosses while the filmy fern was looking especially good. Cautley being on the wetter western side of the county is a good place for ferns and at least nineteen species were noted. The old rocks of Howgill Fells are the habitat of several rare plants found only in this corner of Yorkshire although not rare in some other parts of Britain.

Twelve affiliated societies were represented at the meeting at which the Chair was taken by Mr. R. Chislett, who spoke of the great loss the Union had sustained in the death of Dr. Hincks. The members stood in silent tribute.

Reports on ornithology, botany and bryology were given, but there were no representatives of other sections present. A vote of thanks to Dr. H. Frankland of the Nature Conservancy who had made most of the arrangements for the very successful meeting was moved by Miss Rob who also thanked Mr. Madge and members of the staff of Sedbergh School for the part they had played in the organisation.

In spite of the wet weather on the first day, and the fact that no new records

were made, everyone seemed well satisfied with the arrangements and results of the week-end.

Ornithology (R. Chislett): Samples were explored of the great countryside about the brawling Rawthey, in spate from heavy rains on the 14th and 15th. They included higher and lower slopes of the fells, a fell-side wood, and a fleeting visit to the riverside south of Sedbergh. The larger raptors were little in evidence. Kestrels had been unusually plentiful in the spring and Sedbergh School ornithologists had ringed many young. Owls noted were: Tawny (heard), Short-eared and Barn Owl with young in an old building. Ring-Ousels and Wheatears were on the high ground. Waders noted were: Oystercatcher, Lapwing, Snipe, Woodcock, Curlew, Sandpiper, and Redshank. Warblers and finches were few but the latter included Redpoll; more species would have been noted a month earlier. Other species recorded were; Heron, Red and Black Grouse, Partridge and Pheasant, Lesser Black-backed, Herring, Common and Black-headed Gulls, Wood Pigeons, Swift and three hirundines, four corvids including Magpie, three tits including Long-tailed, Wren and Dipper, Song-Thrush and Blackbird, Redstart, Robin, Spotted Flycatcher, two species of pipit and three of wagtail, Starling and Chaffinch. Mr. Madge and the Ornithological Section of the Sedbergh School Sedgwick Society helped us considerably. Among the species that might have been noted earlier were Wood-Warbler, Pied Flycatcher and Corncrake.

Flowering Plants (C. M. Rob): The rain made any idea of serious botany on Saturday quite impossible. The rills and flushes were raging torrents of peaty or at times muddy water, and the beating rain made it difficult even to see the common plants. Cars were left at Rawthey Bridge and the party worked upstream to the deep shaded rocky gill where the true *Circaea alpina* (Alpine Enchanter's Nightshade) grows in its only Yorkshire station. From here the proposed route was up the Yorkshire bank of the Rawthey to the junction of Needlehouse Gill and then up this as far as time allowed; but as already stated this proved impossible.

The Rawthey valley as far as the junction of Needlehouse is mostly rough grazing with fell vegetation extending right down to the river bank. Except in one or two places where there are small belts of trees, the only meadowland carries a poor thin crop of grass and the weed flora is very restricted. In contrast, the southfacing Westmorland bank is cultivated grassland or planted with trees the whole way along; the grassland is much richer and obviously benefits from the extra warmth and sunlight. Beyond the junction of Needlehouse both sides of the river are in Yorkshire and the north bank has what looked to be quite interesting woodland.

The fern flora of this day was poor compared with Sunday and what did occur was for the most part in small quantity. A few plants of *Cryptogramma crispa* (Parsley Fern) were seen near Uldale (at Cautley this fern is very abundant) and in one place a nice stand of *Thelypteris phegopteris* (Beech Fern) was seen near the junction of the gill and main river. Near Needlehouse there has been a fair amount of planting and here *Castanea sativa* (Sweet Chestnut) is growing well at about 900 ft.

The visit to Cautley was not expected to provide anything new as the locality is one that has been worked by botanists for many years and may be said to be one of the best known in Yorkshire. *Alchemilla alpina* (Alpine Ladies Mantle) and *Epilobium alsinifolium* (Chickweed Willowherb) are fairly plentiful although almost unknown in other parts of Yorkshire. *Saxifraga stellaris* (Starry Saxifrage) also rare elsewhere and *Myosotis brevifolia* (Forget-me-not) grow in the stream below the Spout. *Hymenophyllum wilsonii* (Filmy Fern) is abundant on wet rocks all up the waterfall while in one place about three plants of *Asplenium adiantum-nigrum* were noted.

In spite of much searching no sign of the rare *Orthilia secunda* (Wintergreen) could be found. Probably the head of water coming down was responsible for the failure as it was not possible to get to some of the most likely places.

In addition to the organised excursions individual members noted several interesting plants. *Meum athamanticum* was seen in its well known Lowgill station and the car park in the town added the hybrid Willowherb *Epilobium montanum* × *E. obscurum*. *E. roseum* was growing in the car park at headquarters.

Nomenclature follows Dandy's *List of British Vascular Plants*.

Bryology (G. A. Shaw): A number of early bryological records were made in the Sedbergh area by the Rev. G. Pinder about the middle of the last century. One such

was *Ptilium crista-castrensis* (Hedw.) De Not. in unspecified localities in Dentdale and Garsdale. These localities were entirely lost, and it was not until 1940 that this fine moss was restored to the Yorkshire flora by its discovery in Penny Farm Gill, near Sedbergh, by Dr. T. H. B. Bedford. The writer saw this in 1950 and again during the present meeting.

Breutelia chrysocoma (Dicks.) Lindb. is a moss very rarely found in fruit. Dr. Bedford had the good fortune to find it in this condition in three localities near Sedbergh, but although barren plants were seen frequently during the present meeting, none was observed in fruit. Growing with it in several places was *Ptilidium ciliare* (L.) Hampe.

The late Albert Wilson, during his residence at Sedbergh from 1918 to 1924, added considerably to our botanical knowledge of the district, and one of his finds was *Orthothecium rufescens* (Brid.) B. & S. on dripping rocks of basal conglomerate by the Rawthey near the Strait Bridge. I was able to locate this during the present meeting, and with it were *Gymnostomum aeruginosum* Sm., *c.fr.*, *G. recurvirostrum* Hedw., exceedingly large specimens of *Fissidens adianthoides* Hedw., *Bryum pseudotriquetrum* (Hedw.) Schwaegr., *Cratoneuron commutatum* (Hedw.) Roth, and *Scapania undulata* (L.) Dum. This was a most interesting locality which might repay further investigation.

Anoetangium compactum Schwaegr. was brought in by Miss Rob from high up Rawtheydale. This is a well-known locality where it often fruits freely. *Preissia quadrata* (Scop.) Nees was seen in several places, and *Riccardia pinguis* (L.) S. F. Gray, with *Drepanocladus revolvens* (Sm.) Warnst. was brought from the Spout by Mrs. Duncan.

Of older records, for which modern confirmation is desirable, mention should be made of *Oedipodium griffithianum* (Dicks.) Schwaegr. at Cautley Spout, and *Habrodon perpusillus* (De Not.) Lindb. found in 1872 by George Stabler on ash and sycamore by the Dee below Dent village.

ENTOMOLOGICAL SECTION AT BIRKHAM WOOD KNARESBOROUGH

J. H. FLINT

SOME twenty members and friends attended the spring field meeting of the Section on May 7th, 1961. The day was bright and sunny but a strong, cool wind and an occasional shower of rain, following a period of cold, wet weather, produced rather poor conditions for collecting. The most profitable part of the wood was along the main path where, in sheltered places in the sunshine, hoverflies were notably common and several species of solitary bee (*Andrena* spp.) were found. Ladybird beetles were plentiful here, *Coccinella 7-punctata* L., *Adalia 10-punctata* (L.), *Calvia 14-guttata* (L.), and *Propylea 14-punctata* (L.) were found. Only one butterfly was seen and there was a notable scarcity of the spring sawflies. Among the few taken were *Dolerus haemalodes* Schr. and *Macrophya albicincta* Schr. Heteroptera are not much in evidence at this time of the year and only a few common bugs were seen, among them, *Harpocera thoracica* (Fall.). The hoppers included the usual woodland Delphacids, *Delphacodes discolor* (Boh.) and *D. pellucida* (F.). A specimen of the fine red and black *Cercopis vulnerata* Germ. was swept on the outskirts of the wood.

Beetles were not too plentiful, but worth noting were single specimens of the weevil *Coeliodes dryados* (Gmel.) and, from hawthorn, *Lochmaea crataegi* (Först.). Others taken included *Abax parallelopipedus* (Pills.), *Anisotoma humeralis* (F.), *Derocrepis rufipes* (L.), *Polydrusus pterygomalis* Boh. and *P. tereticollis* (Deg.). Among the hover flies Mr. Crossley reports *Melanostoma mellinum* (L.), *Leucozona lucorum* (L.), *Syrphus elegans* (Harris), *Pipiza fenestrata* (Mg.), *Cheilosia maculata* (Fall.) and *Eristalis pertinax* (Scop.). Other insects, particularly sawflies, remain for identification in the future. I am indebted to several members for notes on their captures, and although the day was not particularly profitable it was generally agreed that the wood would be worth further investigation under more favourable conditions.

BOTANICAL SECTION MEETING AT BUCKDEN, July 30th

The primary object of this meeting was to re-find *Eleocharis austriaca* which, more than ten years ago, had been collected by Mr. N. Y. Sandwith by the Wharfe between Buckden and Starbotton, but only comparatively recently recognised as an addition to the British flora. Mr. Sandwith had himself revisited the locality however, a few weeks before this field meeting and had found the plant still in good quantity in the place whence his earlier specimens had been collected. An investigation of the whole of the valley bottom on both sides of the river was carried out therefore with a view to finding if the plant occurred elsewhere.

The party set out from Buckden down the right (west) bank of the river and examined every suitable piece of ground which could be found, crossing the river above Starbotton and working back again on the other side. No difficulty was experienced in finding the plant in its original station and it was at once recognised as notably distinct from *Eleocharis palustris*, differing in its larger, more caespitose habit with softer stems, its strikingly conical-acute heads with chaffy scales which tend to spread with age, its short anthers and the quite different shape of the style base. Although some robust specimens of *E. palustris* had been encountered earlier, their characters, other than size, differed in no way from those of more normally sized plants. No other colonies of *E. austriaca* were found and its isolated occurrence here—if further search in Yorkshire and elsewhere fails to yield additional stations—is of great phytogeographical interest.

Following the return to Buckden, the gill and scars behind the village were investigated, the species particularly in mind being *Crepis mollis*, which stands on record from here. No success attended this search however, and the many species seen on the rocks and fell side hereabouts were too characteristic of such limestone areas to merit enumeration. W.A.S.

AUTUMN FORAY AT THORNTON DALE September 9th to 14th, 1960

W. G. BRAMLEY

THERE was a great contrast between the 1959 and 1960 forays. In 1959 the problem was finding damp areas, in 1960 it was finding dry ones. Rain had fallen on most days since the end of June though the total amount was not greatly in excess of average and the committee were lucky to hold the foray during the only week-end which was nearly free from rain. Although some 150 species of toadstools were finally accounted for they could not be said to be in profusion. This may be due partly to the rather cold summer and partly to the somewhat earlier date as the writer's impression gathered towards the end of September and early October was that the larger fungi were then more plentiful, at least the commoner species.

The area covered was much the same as in the previous year but more time was devoted to Castle Howard and Kirkham Abbey.

Thanks are due to all who helped with collecting and especially to Messrs. Orton and Graddon, who have been responsible for the following list which only contains the more interesting species gathered.

† Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*.

* Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 6z.

C = Castle Howard.

E = Ellerburn.

K.A. = Kirkham Abbey.

T = Thornton Dale.

K = Kingthorpe Woods.

DISCOMYCETES (W. D. Graddon)

Ascobolus viridis Curr., C.

† *Calycella sulphurina* (Quél.) Boud., T.

† *Dasyscypha brevipila* Le Gal, T.

† *Galactinia emileia* (Cooke) Boud., T.

G. lividula (Phill.) Boud., C.

* *Melastiza chateri* (W. G. Sm.) Boud., K.A.

Otidea leporina (Batsch) Fuckel, T.

Pustularia cupularis (Linn.) Fuckel, K.

Scutellinia asperior (Nyl.) Le Gal., C.

Trichophaea gregaria (Rehm) Boud., E.

Mr. W. D. Graddon writes: The *Otidea leporina* attracted considerable attention. It occurred in two fine colonies a few yards apart. In one colony the outer surface was the usual washleather brown, but in the other this surface was beautifully flushed with lilac, but no microscopic differences could be detected. *Pustularia cupularis* was quite widespread beneath *Mercurialis perennis* cover but needed looking for. *Galactinia emileia* occurred as a fine solitary specimen on the bare earth of a mole-hill.

PYRENOMYCETES (W. G. Bramley)

Only about a dozen species were collected in the two days available to the writer and these were all fairly common ones. *Nectria peziza* was again collected on the same log and old *Polyporus* as in 1959.

BASIDIOMYCETES

AGARICALES (P. D. Orton)

- †*Conocybe appendiculata* J. Lange & Kühn., K.
- †*C. filiaris* (Fr.) Kühn., K.A.
- †*C. laricina* (Kühn.) Kühn., K.A.
- †*C. vestita* (Fr.) Kühn., K.A.
- †*Coprinus cineratus* Quél., K.
- †*C. cortinatus* J. Lange, C.
- †*C. ellisii* Orton, C, K.
- †*Cortinarius (Myx) causticus* Fr., T.
- †*C. (M) croceocaeruleus* (Pers. ex Fr.) Fr., T.
- †*C. (Tela) saniosus* (Fr.) Fr., K.A.
- †*Crepidotus inhonestus* Karst., E.
- †*C. phillipsii* (Berk. ex Br.) Sacc., E.
- †*Entoloma sordidulum* (Kühn. & Romagn.) Orton, K.
- †*Flocculina granulosa* (J. Lange) Orton, K, K.A.
- †*F. pusillima* Orton, K.A.
- †*Galerina cinctula* Orton, E.
- †*G. unicolor* (Vahl ex Sommerf.) Sing., K.
- †*G. vittaeformis* (Fr.) Moser, C.
- †*Inocybe bongardii* (Weinm.) Quél., E.
- †*I. hirtella* Bres., K.
- †*I. griseoililacina* J. Lange, T.
- †*I. maculata* Boud., K.
- **I. patouillardii* Bres., T.
- †*Lactarius circellatus* Fr., K.
- †*L. obscuratus* (Lasch) Fr. (M. & G. *sub tabidus*) K.
- †*Lepiota eriophora* Peck, K.A.
- †*L. fulvella* Rea, K, T.
- †*L. fuscovinacea* Moller & J. Lange, E.
- †*L. rosea* Rea, K.A.
- †*L. subalba* Kühn. ex Orton, E.
- †*L. tomentella* J. Lange, K.A.
- †*Lyophyllum fumato-foetens* (Secr.) J. Schaeff., E.
- †*Marasmius torquescens* Quél., K.
- †*Mycena oortiana* Hora, C, K.
- **M. speirea* (Fr. ex Fr.) Gillet, C, E, K.A.
- **M. stylobates* (Pers. ex Fr.) Kummer, E.
- †*M. swartzii* (Fr. ex Fr.) A. H. Smith, E.
- †*Naucoria luteolofibrillosa* (Kühn.) Kühn. & Romagn., E.
- †*N. striatula* Orton, E.
- †*Nolanea tenuipes* Orton, K.A.
- †*Psathyrella squamosa* (Karst.) Moser apud Gams, C.
- †*Russula mairei* Sing., K, T.
- **R. rosea* Quél., (M. & G. *sub incarnata*) C.
- †*R. solaris* Ferdin. & Winge, C.
- †*Volvariella taylori* (Berk. & Br.) Sing., K.
- †*Clavaria pulchella* var. *asperula* Bourd. & Galz., C (*fide* D. A. Reid)
- †*Corticium fusiforme* (Berk.) Wakefield (isarioid state growing on grass) (*fide* D. A. Reid).

SPRING FORAY AT GRASSINGTON, April 29th–May 1st, 1961

W. G. BRAMLEY

TERRAIN varying from swampy grassland to dry limestone scree provided plenty of habitats for the fungus hunter at Grassington and its surrounding countryside. The open oak woodland adjoining the river at Grass Woods was first visited and almost the first find was about nine specimens of the rather uncommon Morell. A damp pasture provided the agaricologists with quite a number of specimens, and *Coprinus miser* again turned up on cow dung. This is the second British record but the species is probably far more common and has no doubt been overlooked. Throughout the foray, agarics were fairly abundant and some forty species, chiefly of *Conocybe*, *Coprinus* and *Galerina* were identified and three or four are still under consideration. Grass Wood itself was dry though in the damper parts a number of discomycetes and pyrenomycetes were unearthed.

Bolton Woods on the Saturday were damper, though here the flora was much the same. A search for *Godronia urceola* (Nat. 1956, 39) was unsuccessful and the original Blackcurrant bush was not found. Growing under dense *Allium* cover was a species of *Ciborina* in quantity. As *Botrytis globosa* was infecting the *Allium* this was at first thought to be *Sclerotinia globosa* but as microscopical examination showed spores only half the size expected the material is still under consideration. On Sunday the rain came down but a few braved the elements for an hour or two at Burnsall where *Vibrissia* was again seen in profusion together with *Mitruha paludosa*.

Of some ninety species identified the following are those not listed in Mason and Grainger's *Catalogue of Yorkshire Fungi* for V.C. 64. Thanks are due to the fourteen members and friends who helped to collect and especially to W. D. Graddon for the list of Discomycetes and R. Watling for naming the agarics.

†Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*.

*Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 64.

B = Bolton Abbey Woods

G = Grass Woods

AGARICALES:

† <i>Conocybe exanulata</i> (Kuhn.) Kuhn. & Romagn.	B.
† <i>C. magnicapitata</i> P. D. Orton	B.
† <i>Coprinus acuminatus</i> Romagn.	B.
† <i>C. miser</i> Karsten	G.
† <i>Galerina clavata</i> (Vel.) Kuhn.	B.
* <i>G. vittaeformis</i> (Fr.) Moser (Mason & Grainger <i>sub rubiginosa</i>)	B.
† <i>Omphalina ericetorum</i> (Fr.) M. Lange,	Burnsall
† <i>Paneolus ater</i> (J. Lange) Kuhn. & Romagn.	B.

UREDINALES:

Puccinia mirabillissima Peck, II. III. on *Mahonia aquifolium* Grassington

DISCOMYCETALES:

* <i>Ascobolus viridis</i> Curreg.	B.
* <i>Dasyscyphus grevillei</i> (Berk.) Massee	B.
* <i>Hyaloscypha leuconica</i> (Cooke) Nannf.	G.
* <i>Micropodia pteridina</i> (Karst.) Boud.	B.G.
† <i>Ombrophilla clavus</i> var. <i>grandis</i> Boud.	G.
* <i>Pezizella chrysostigma</i> (Fr.) Sacc.	B.G.
* <i>Propolis faginea</i> (Schrad.) Karst., on <i>Fagus</i> and <i>Fraxinus</i>	G.
* <i>Psilopeziza babingtonii</i> (B. & Br.) Le Gal	B.
* <i>Tapesia livido-fusca</i> (Fr.) Fuckel	G.

PYRENOYCETALES:

* <i>Berlesiella nigerrima</i> (Curr.) Sacc., on <i>Eutype</i> on <i>Acer</i>	G.
* <i>Calospora platanoides</i> (Pers.) Messl. on <i>Acer</i>	G.
* <i>Didymella tosta</i> (B. & Br.) Sacc., on <i>Chamaenerion</i>	B.G.
† <i>Diaporthe arctii</i> (Lasch) Nils., on <i>Chamaenerion</i>	G.
* <i>Rosellinia mammiformis</i> (Fr.) Ces. & De Not., on <i>Fagus</i>	G.

1962 April-June

CORRESPONDENCE

To the Editor of *The Naturalist*.

SIR,

My attention has been drawn to the omission from E. W. Taylor's contribution to the Centenary issue of *The Naturalist* (Oct.-Dec. 1961) of any mention of Fairburn Ings Nature Reserve. The article in question dealt, of course, primarily with the work of the Yorkshire Naturalists' Trust. But any survey of Nature Conservation in Yorkshire is incomplete without some reference to two very important projects in both of which the Union has taken an active interest.

In Fairburn Ings Nature Reserve we have the recognition not only by naturalists, but also by a local authority (the County Council of the West Riding of Yorkshire) of the need for conservation. There is also the co-operation of a nationalised industry (the National Coal Board) on whose land this reserve was established in 1957. That the Trust should strive for the preservation of important areas goes without question. It is something of an achievement that a county authority has come round to the same sort of view. The local reserve at Farndale in the North Riding is a further example.

In the Humber Wildfowl Refuge, there has been co-operation not only between naturalists from both Yorkshire and Lincolnshire, but also co-operation between these naturalists and wildfowlers. This kind of co-operation for the preservation of birdlife could usefully be applied in other areas.

The Trust has, I need hardly add, shown its interest in these two projects and is, of course, represented on the committees of management of the Fairburn Reserve and the Humber Refuge.

Yours faithfully,

R. F. DICKENS.

NATURAL HISTORY FILMS

The Intelligence Unit of the Council for Nature has done a useful service by preparing a list of 16 mm. films on natural history subjects for the benefit of naturalists' societies, teachers and others wishing to prepare programmes and educational courses with a natural history content. The first part of this list which is now issued covers British and European natural history. Later this year it is intended to issue a second part which will cover the rest of the world.

Full information is given about each film, i.e. the distributors from whom the film may be hired and the price, whether black and white or in colour, sound or silent, running time, if supplementary notes are supplied and whether particularly relevant to Britain or Continental Europe. Films suitable for children aged between nine and fifteen are indicated but those aimed at very young children are not included. About 220 films are included in the list and classified as General, Ecological, Regional, Mammals, Birds, Fishes, Reptiles and Amphibians, Insects and Plants. The list is obtainable from the Council for Nature, 41 Queen's Gate, London, S.W.7, price 2/6 including postage.

FIELD NOTE

Abnormal Pelvic Fins in a Crucian Carp. A specimen of Crucian carp (*Carassius carassius* L.) in which the pelvic fins are reduced to spikes, was taken by an angler in Moat Mount Lake, Mill Hill, London. It was examined in the presence of two witnesses, tagged as part of a current survey, and returned alive. The fish could not be retained as the author had no means of preserving it in the very hot weather.

The fish was healthy, with no scars, nor signs of dropsy or fin-rot. It weighed 14 oz. (approx 400 g.) and measured 10 inches from head to tail fork. Only the first anterior fin ray of each pelvic fin was present, as an epidermis-covered spike. These rudiments were as long as typical pelvic fins of this species. They had the full normal range of movement about their bases. An additional 5 mm. long spine was also visible between the two pelvic rudiments and to the left of the mid-ventral line. All the other fins were well formed.

The fish fought well when caught. Its powers of movement did not seem to be impaired by this deformity.

—David Marlborough, 98 Stoneyfields Lane, Edgware, Middlesex.

BOOK REVIEWS

The Coil of Life: The Story of the Great Discoveries in the Life Sciences, by Ruth Moore. Pp. xvi + 418 with 16 plates and 61 drawings by Patricia M. Jackson. Constable, London, 1961. 40/-.

No single technical advance made since the end of the Second World War in our understanding of natural phenomena, not even the development of nuclear energy sources, can match either in present excitement or in future promise the recent spectacular revelation of the molecular basis of heredity. Three streams of scientific endeavour, one genetical, one biochemical and one biophysical, have come together and the mechanism whereby living organisms—including man—both maintain their individuality and occasionally change, stands—at least in principle—revealed. This fantastic discovery cannot, however, any more than can any other discovery, be regarded as a discovery *de novo*; on the contrary it is firmly based on the sure foundation of the work of many generations of biologists of all persuasions, reaching back over at least 200 years. In this fascinating book Ruth Moore sets out to tell the story and does so with remarkable success.

Miss Moore begins her story with Lavoisier's discoveries in combustion and respiration, continues through the work of Bichat on tissues and of Wohler and Liebig on the first syntheses of 'organic' compounds; picks up the story of the cell from Leeuwenhoek through Nehemiah Grew to Schleiden and Schwann; introduces the genetical stream from Mendel through Darwin and De Vries to Morgan; shows how the work of Pasteur and of Roux and Driesch tell part of the story; and finally leads to the last triumphant successes of Pauling and Corey with the proteins and of Crick and Watson and of Wilkins on nucleic acid; all welded together in a convincing tale which steadily unfolds itself page by page. The reader is left at the end of the book breathless, profoundly impressed by the breadth of Miss Moore's reading and understanding, eager for the chapters still to be written. This is a readable, consistently thought-provoking book which everybody, and not only biologists, should read. A useful guide to further reading at the end of the book contains references to many other important books and references.

The reviewer has so enjoyed this book—a familiar tale, well told—that it is only with some hesitation and embarrassment that he mentions its faults. The author can perhaps be forgiven for stretching historical fact by her implication that man's study of organisms passed smoothly from whole body to tissues to cells to organelles and to giant molecules, since she does throughout give dates. In the reviewer's opinion, however, Chapter 17 on proteins should have come earlier and the book should then have ended on the entrancing high note of the coding hypotheses in Chapter 18; for the subsequent chapters, important though the matter in them undoubtedly is, seem slightly out of context, certainly much too brief, and, for the reviewer, come as a *tour de force*. Moreover, the author should not have allowed herself to write (footnote, p. 368) '... electrons moving with the speed of light' or so to simplify double refraction phenomena as to render them meaningless (p. 104) rather than leave them out altogether. It seems a pity, too, to have revived the long-dead spireme theory as is done on pp. 210 and 211, and it is particularly difficult to see why two amino acids are chosen as a unit in the figure on p. 157 and to harmonise the figure on p. 364 with the presumed coding of DNA and transfer RNA.

These are, however, but small matters in a book which is to be recommended without reservation to scientists and to laymen alike. Both Ruth Moore and Messrs. Constable are to be highly commended for producing a book on a fundamental scientific topic which is, nevertheless, throughout as enthralling as any 'whodunit'.

R.D.P.

A Century of Darwin, edited by S. A. Barnett. Pp. xvi + 376 with 5 plates and 55 text illustrations. Mercury Books, Heinemann, 1962. 12/6.

This is a reissue of a book published in 1958 to mark the centenary of the joint paper by Darwin and Wallace on natural selection. The 15 essays, all by acknowledged experts in their various fields, deal with Darwin's many-sided contributions to scientific fact and theory and give a modern evaluation of his work. The essays range over zoology, botany, geology, anthropology, social biology and ethics and the treatment throughout is authoritative without ever being abstruse. As a modern spectrum of Darwinian achievement it is a notable publication.

W.A.S.

Down the Long Wind: A Study of Bird Migration, by **Garth Christian**. Pp. 240. Illustrated by 31 photographs (25 by Hosking). Newnes. 21/- net.

Here is a book about bird migration written by one who calls himself a newcomer to bird-ringing, from which however he derives a large part of his information, including some from Spurn. Beginning with the Sussex Bee-eaters of 1954, with which Mr. Christian was involved, he follows with a chapter headed 'Looking Back', with speculations on the way migration began, on navigation, on radar, on drift and the effects of weather. Problems concerning species are discussed: Jackdaw, Starling, Swallow, Swift, Tits, thrushes, finches, flycatchers, Rook, Fieldfare, Redwing, Skylark, Lapwing, warblers, Goldcrest, Nightjar, Cuckoo. The last four chapters include three on 'Natural Regulators' (predators), and one headed 'The Outlook for Tomorrow'. A brave effort. Possibly the author attempts too much. He has done his homework well, but not well enough to avoid slight pitfalls. Readers are presented with innumerable facts and problems, in readable English, sometimes with a poetic touch, and without technical jargon. The title is from Tennyson; but much more often migrating birds fly across or against the wind! Perhaps the wisest sentence is written regarding the migration of finches (but applying equally to other orders and species): 'Anything written on the subject today may need to be expanded during the next decade'. The author knows and loves his birds.

R.C.

Cliffs of Freedom, by **Roscoe Howells**. Pp. 155 with 28 photographs. Published November 1961 by Llandysul Gomerian Press. 18/6.

A casual look at the cover-photograph and list of attractive illustrations might well mislead one into believing that this is primarily a book on natural history. Despite the fact that half of them are of birds, there is in many cases scanty excuse for their inclusion and the book contributes virtually nothing new to the study of plants and animals. It is, rather, the story of the island of Skomer, for the most part conjectural as far as early history is concerned, but detailed when we reach the life of Reuben Codd, the last man to farm the island before it became a National Nature Reserve in 1958.

Whilst criticisms of over-zealous bird-ringers and seal-taggers needed to be voiced, I could not help feeling that between the lines differences between individuals and more particularly with the West Wales Field Society were being aired and that these had assumed greater importance than the welfare of the birds and animals. This 'dirty washing' rather spoils an otherwise enjoyable book for me, as did the repeated insistence that God gave man 'Dominion over all'.

R.F.D.

Country Years, by **Frances Pitt**. Pp. 240 with 49 plates on 23 pages. George Allen & Unwin Ltd., 1961. 30/-.

The easy style of this fascinating autobiography induces the feeling that we are listening while Miss Pitt chats freely about her home, her pets, trips to Scandinavia, Hungary, Iceland, etc. Not only are there frequent references to nature photography and to the birds and animals with which she has always been associated but this is also a miniature, portraying changes in the social history of the past 75 years.

I found a reference to a helpful former secretary of the Zoological Photographic Club—our own 'R.C.'—particularly pleasing. The effect of the generally excellent plates—all but four are Miss Pitt's own work—is spoilt in some cases by overcrowding (three on page 128). There are a few unfortunate misprints—a list of ducks includes 'pigeon, teal, etc.', and there are 'whopper swans' in Iceland! In a book of this nature, scientific names, especially when not accompanied by their English equivalents, seem rather incongruous.

Miss Pitt gives the very necessary injunction that no one should attempt to photograph at the nest of a rare bird and draws attention to the harm which may be done unwittingly by photographer and investigator alike. 'The bird's best friend is the person who knows nothing about it.' 'Are the additions to our sum of knowledge worth the troubles we inflict on them?—this query should be ever present in the mind of the bird investigator.'

It is a readable book which young and old, alike, will enjoy.

R.F.D.

Beetles, by **Ewald Reitter**. Pp. 205, including 60 colour plates. Paul Hanly, London, 1961. £5.

The author's intention is to stimulate an interest in the world of beetles by revealing their great variety of form and range of colouring. He has selected striking examples from all over the world and the 60 colour plates reproduce his colour photographs of 241 specimens. The beetles depicted, Stag, Hercules and Goliath beetles with enormously developed mandibles or head and thoracic projections, resplendent chafers, bizarre longhorns, weevils and many others will certainly excite wonder and the scale of reproduction (some are enlarged in the reproduction to nine inches) enhances their appearance. The photography and printing are excellent. The text is for the general reader, an elementary introduction to the beetles, particularly European ones, with very brief accounts of the principal families, beetles in folklore, a history of the study of beetles and simple instructions for the collector. The text has little discernible connection with the illustrations and the book must be regarded chiefly as a lavish picture book. As such it will be a very handsome possession for those who can afford it.

Its real value is problematic for it is difficult to see to what use the book can be put. Those who are inspired by the plates are unlikely to see such beetles outside our museums, unless they collect with the purse. The book does not show a representative selection of the beetles for 89 are Lamellicorns, 64 are Longicorns, the remaining orders being covered by 88 examples. Only 12 have a claim to be considered British. The text is not free from errors of spelling (godesses, tunne'ing) nor from errors of fact. Some of these may be due to the attempt to popularise; Scolytids, for example, are not, with a few exceptions, 'barely a millimeter long'.

J.H.F.

A Key to the Nymphs of the British Species of Ephemeroptera, by **T. T. Macan**. Freshwater Biological Association Scientific Publication No. 20. 1961. 4/6.

All the British species of Mayflies are included in this excellent publication. The quality of the numerous illustrations and the care which has obviously been taken in the preparation of the keys reflect the usual high standard of Macan's work. The combination of a taxonomist and field worker is less rare than formerly, but in Macan the combination is unusually good, and results in a publication suitable both for the laboratory taxonomist and the freshwater student in the field. The novel form of illustrating the life-histories is extremely good.

Two criticisms may fairly be made. The distribution maps of the species are lacking in both Lancashire and Yorkshire records—these could be improved by reference to the Y.N.U. recorders and to the Lancashire and Cheshire recorders. The distribution data are given in a form which has recently been used in other publications and which at first sight is somewhat paradoxical. A species can be listed as rare, abundant. This means that it is abundant in very few localities. The usual way of giving the distribution of the same species would be 'locally abundant' and this would appear to be much more explanatory.

These, however, in no way detract from the main features of the book; for too long the freshwater student, although well provided for in the matter of genera, has had to arrive at the species by intuition or elimination of the improbables—a process which is never satisfying. This is a publication which forms a worthy partner to that on the Plecoptera nymphs by Hynes.

A.B.

Collins' Guide to Bulbs, by **Patrick M. Syngé**. Pp. 320 with 32 colour plates, 24 black and white plates, 4 line drawings, bibliography and glossary. Collins. 30/-.

The first thirty pages are devoted to the cultivation and use of bulbs in the garden, propagation and collecting, 'bulb' being interpreted in the usual horticultural sense and including corms, tubers and rhizomes. 1,650 species, etc., are then described in the major part of the book which is alphabetical by genera and 330 of these plants are well and pleasingly illustrated in colour. The general standard of the book is excellent. There are occasional misprints and in some places a lack of clarity in phrasing which may lead to confusion or apparent inaccuracies; but errors are refreshingly rare and both author and publishers are to be congratulated on this attractive, comprehensive and useful book.

T.S.C.

African Genesis; a personal investigation into the animal origins and nature of man, by **Robert Ardrey**. Pp. 380 with two plates and line drawings in text. Collins, 1961. 36/-.

The success of science in the study and understanding of the most recondite phenomena is often contrasted with our very meagre knowledge of ourselves and this book is an attempt to combine an outline of our evolution from a sub-human level with a discussion of the underlying motives of our behaviour. Here at once a primary explanation of the reason for the disparity becomes apparent since the answers to a scientific investigation of our behaviour patterns, whilst not necessarily quite so disconcerting as the conclusions of the author, can hardly prove less unpalatable to many than did the speculations on our zoological origin a century ago. Ardrey is himself a dramatist but has had the enormous advantage of a personal knowledge both of the African sites from which much of the evidence of man's origin is derived and of many of the personalities, some distinctly colourful, who have been involved in the work. The result is a book which may appear a little breathless, a little overloaded with rhetorical questions and purple passages, but thoroughly well informed on the fossil remains, very clear indeed compared with most of the scientific writing on the subject and full of the hearty bias so lacking today in most sciences except anthropology. For his discussions on human behaviour he has assembled a fascinating background from widely scattered and often obscure sources on comparative behaviour in birds and primates and, whatever the reaction of the reader to the particular parallels drawn, it appears indisputable to a scientist that impersonal evidence of this sort is the only satisfactory basis for the study of human motivation and so in turn for any permanent solution of human problems. The book is well produced and the illustrations charming, including the Pterodactyl in the first plate which has however winged its way from the Jurassic into the Carboniferous.

T.K.

Vanishing Animals, by **Philip Street**. Pp. 232 with 20 photographic plates. Faber and Faber. 21/-.

All those interested in the preservation of our rapidly diminishing wild life will find in this book a concise and excellent presentation of the evidence. We are told the sad story of the accelerating process of extinction, which has inevitably followed on the spread of human civilisation, both by direct persecution of animal life for economic and sporting ends, and also by reason of the contracting natural habitat of many species. The dangers of upsetting the delicate and often complex balance of animal populations by the introduction of alien species is also discussed. We need only consider the effect on the unique marsupial fauna of Australia of the introduction of rabbits, rats and cats, to realise the truth of this.

Mr. Street tells us much about the brighter side of the picture—of the National Parks established in many countries, often against strong opposition—and of the species saved from doom in the nick of time in these Parks and in captivity. It is certain that this extremely interesting book should stimulate all of us, scientist and layman alike, to give our support to the present world-wide campaign to save our precious heritage of wild life. It seems fitting to quote here from Mr. Street's book the words of Mervyn Cowie, Director of the Royal National Parks of Kenya, speaking of Africa's rich but dwindling fauna: 'It is not ours to dispose of as we please; we hold it in trust.'

D.L.H.

Animals before Adam, by **W. E. Swinton**. Pp. 60 with 30 plates. Phoenix House, London. 1961. 12/6.

Dr. Swinton is well-known both as a palaeontologist and as a broadcaster, presenting the intricacies of his subject to an amateur audience. This volume will certainly add to that reputation, for if the value of a popular volume is judged by the way it stimulates the imagination of its readers, then Dr. Swinton's little book gains high marks. As one would expect, it is mainly vertebrates which are dealt with. The reader is unlikely to find any such fossils himself but can get a vivid picture of what the creatures, in succession from the early fishes to the late mammals, were like, how they moved, and what they ate. High praise must also be given to the plates, whether photographs of actual fossils or drawings by Neave Parker.

H.C.V.

On Growth and Form, by **Sir D'Arcy Thompson**. Abridged edition edited by **J. Tyler Bonner**. Pp. xiv + 346 with 2 photographic plates and 181 text figures. Cambridge University Press, 1961. 32/6.

D'Arcy Thompson's great work first appeared in 1917 and an appreciably extended edition was published in 1942. The book will always rank as a classic for its wide range of scholarship and its style, as well as for its ideas. But the now flourishing sciences of biochemistry and biophysics have rendered much of the information out of date and, as pointed out in the volume under review, many of the ideas that were heretic in 1917 are now heretic for a different reason. This abridged version has been edited by Professor J. Tyler Bonner, with a view to increasing the availability of the book, correcting a number of errors and pruning a good deal of the text. In it six of the original 17 chapters have gone, including those on rate of growth; cell form and structure; phyllotaxis, and the shapes of eggs and other hollow structures. There are also some minor deletions and a commentary on the chapters that remain is designed to administer 'a mild freshening'.

There is little doubt that *Growth and Form* is now read mainly for its reputation as 'beyond comparison the finest work of literature in all the annals of science that have been recorded in the English tongue' (Medawar) and the question inevitably arises whether an abridged edition can ever be justified. Surely those who still desire to read, or rather savour *Growth and Form* will choose the original. This reservation notwithstanding, the omissions have been made with care and tact so that little that is still of value is lost and, above all, the original style has been preserved. The annotations, however, do little more than indicate the magnitude of the gap between modern knowledge and even the 1942 edition. But there is no doubt that a complete revision of *Growth and Form* is neither possible nor desirable, and if this abridged edition makes it available to a wider range of general readers then it will serve a worthy purpose. J.M.D.

Welsh Timber Trees: Native and Introduced, by **H. A. Hyde**. 3rd Edition. Pp. xii + 173 with 28 plates and 53 text figures. National Museum of Wales, Cardiff. 18/-.

The first edition of this book appeared in 1931; the present edition has been entirely rewritten and considerably expanded and is virtually a new work. A full introduction deals with the history and distribution of the types of native woodland and the extent and composition of the State forest plantations. The main body of the work dealing with descriptions of all the native and commonly planted trees includes winter as well as summer characters and particulars of noteworthy specimens or stands of trees. There are good keys to genera and species—those to the conifers are particularly useful—and the clear text illustrations are especially valuable as aids to identification. This is a first-rate book which is warmly recommended to British botanists in general for, like the companion volume on Welsh ferns, it combines a high standard of accuracy with attractive presentation, is very reasonably priced and its utility is very far from being confined to the area with which it is specially concerned. W.A.S.

The Peak District, by **K. C. Edwards**. Pp. 240 with 7 colour photographs, 49 photographs in black and white, and 15 maps and diagrams. *New Naturalist* series. Collins, 1962. 30/-.

The region in the southern Pennines known as the Peak District was designated as England's first national park. This book about it is written for naturalists, geologists and ramblers as a general introduction to the region. Situated in the heart of industrial England with Sheffield and Manchester on its fringes and nearly half the population of the country within 75 miles of its borders, the wooded dales, limestone gorges, upland pastures and wide expanse of moorland forming the High Peak are readily accessible, and much of the countryside is inviting at all seasons to those who delight in walking.

Professor Edwards deals fully with the geography of the area, and there are equally expert sections by Professor H. H. Swinnerton and Mr. R. H. Hall who have provided the geological and botanical chapters respectively. The author has also drawn freely from the numerous publications by specialist-writers who are mainly Derbyshire men; and at the close of each chapter, there is a brief bibliography which will enable readers to delve deeper into any aspect that appeals, from villages and farms, towns and routes, ploughland and pasture, to wealth from the rocks, water for cities, and the Peak as a national park.

Two of the four appendices deal with the bird and fish life of the district; there is also a special contribution by Mr. G. J. Mosley of Nottingham University, and an up-to-date survey by the Planning Officer to the National Park Planning Board. It is a meaty and generously illustrated book, good value, and strongly recommended. J.A.

Bird-song, by **W. H. Thorpe**. Pp. 143 with 65 text figures. Cambridge Monographs in Experimental Biology, No. 12. Cambridge University Press, 1961. 20/-.

In this fascinating monograph Dr. Thorpe explains various methods used for investigating bird song and the value of the sound spectrogram for this purpose. He carefully analyses the different kinds of notes and song used under different circumstances, its significance and development. Dr. Thorpe also includes a most informative chapter on the anatomy and physiology of sound production and hearing in birds and concludes with an extensive list of references to papers on kindred subjects. All ornithologists interested in bird song, Field Study Centres and Universities would be well advised to invest in a copy of this valuable monograph. E.H.

Nest Boxes, by **Edwin Cohen**. B.T.O. Field Guide No. 3, revised (3rd) edition, 1961. 3/-.

Binoculars and Telescopes for Field Work, by **J. R. Hebditch**. Pp. 20. The B.T.O., 2 King Edward Street, Oxford. 1/6.

Forty pages devoted to the provision of artificial nesting-places for birds that will use them. A useful manual. Some surprising species are included. I notice a 'Tree-Creeper Box'; but wonder if it is as successful as the slabs of bark from dead trees that the late N. Tracy used to wire against the trunks of trees in his garden so that nests could be built behind. The booklet well covers its purpose.

The various types of binoculars and telescopes are discussed without technicalities, with their uses and advantages with special reference to the needs of naturalists. British and German makes are listed with their properties and prices analysed. The pamphlet answers the questions I am often asked better than I can. R.C.

Faces: Profiles of Dogs. Text by **V. Sackville-West**, photographs by **Laelia Goehr**. 44 full-page plates. Collins, London. 30/-.

The photographs in this doggy picture-book claim to show the forty-four dogs in 'particular and very individual moods', many of them are attractive as pictures but a number are difficult to identify. The Bobtail Sheepdog, along with some others appears to have been photographed in a coalmine, while the Corgi and Doberman give a misleading and very unfair conception of the breeds.

Miss Sackville-West's historical notes and personal comments on each breed illustrated are amusing and, for most breeds, interesting; but all Golden Labradors are not dim and not all Alsations bite.

Fish of Rivers, Lakes and Ponds, by **F. J. Taylor**. Pp. 88 with 50 coloured illustrations and 12 line drawings. Blandford Press, London, 1961. 5/-.

Living with Reptiles, by **Kathleen Pickard-Smith**. Pp. 222 with 31 photographic plates. Thomas Nelson & Sons, Ltd., Edinburgh, 1961. 18/-.

Both these books can be recommended in every way and the book on fish, which is well illustrated, should be a great asset to the youthful angler for it is not only full of information about each species but it is in every sense practical.

Mrs. Pickard-Smith has written a truly happy book about her reptile and amphibian pets which will give pleasure to all who read it.

Vivarium Life: A Manual on Amphibians, Reptiles and Cold-water Fish, by **Alfred Leutscher**. Pp. 252 with 126 line drawings. Cleaver-Hume Press, Ltd., London, 1961. 25/-.

This second edition of a book first published in 1952 contains an additional and valuable chapter on the setting up of different types of vivaria, both indoors and out, to which appropriate references are made throughout. The descriptions of the different species are adequate though many of the illustrations are disappointing. The cramped style of the sub-headings and text gives one the impression of notes yet such was unnecessary in view of the waste space below each species. E.H.

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with the assistance as referees in special departments of

Ralph Chislett, F.R.P.S., M.B.O.U. W. H. Pearsall, D.Sc., F.R.S., F.L.S.
Mrs. A. Hazelwood. E. W. Taylor, C.B.E., D.Sc., F.R.S.
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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, 1961**

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Report for 1961 (Compiled by A. J. Wallis)

The delay in the publication of this report has been caused by unavoidable factors which should not recur. Considerable experience has been gained which should speed up future presentation, and the delay of this and last year's report is very much regretted.

One aspect concerning the preparation of this report which was not made fully clear a year ago must be amplified here. Each of the recorders is responsible for the records received from his own area, but when any rarity is recorded the relative details are circulated to, and where possible discussed by, all of the recorders. No record of a rarity is accepted or discarded by one person alone. All such records are the subject of a committee decision, the principles adopted following closely those of the British Birds Rarities Committee, with whom we have the closest contact.

Both the March and October meetings were held in Leeds and were well attended, and in November Yorkshire birdwatchers were hosts to the first Bird Ringers' Conference arranged by the British Trust for Ornithology. The Conference was held at Cober Hill Guest House, Cloughton, near Scarborough, and proved to be a most interesting and stimulating weekend, with humour added in good measure by Charlie Winn and his helpers with the mist nets operated at Fairburn.

As usual the report from the Spurn Bird Observatory has been compiled by Ralph Chislett and George Ainsworth, and this year we have to thank John Mather for kindly sifting and preparing the records of recoveries of Yorkshire ringed birds. With more and more birds being ringed the numbers of recoveries must inevitably rise, and to select for publication those which give the greatest amount of information is no mean task. There are some who have expressed regret and concern that the table of recoveries has been separated from the Classified List, and it must be clear to all that there are arguments on both sides. The method now in use has helped in two ways—firstly, with the help of John Mather, the load of preparation has been spread, and secondly, by the use of smaller type for this section it has been possible to include rather more details than would otherwise be possible. Many people today are interested in ringing and the results the recoveries show, and the tabular form is of benefit to them, but there are others who, in the future, will find the need to refer to two parts of a single report for information troublesome and an inconvenience. It is difficult with such limited space to have the best of both worlds.

The year has seen events of considerable interest, including a new record for the county—a Surf Scoter at Spurn. Some areas are more likely to be visited by interesting species, rather than other areas of less inviting terrain, and it is not surprising that this new record, together with other varieties, occurred at Spurn. However, other localities have some compensations. The Lower Derwent Valley, in February, proved exciting when up to 200 Bewick's Swans, the largest number recorded in the county, stayed for some time.

Just as 1960 will be remembered for the numbers of Little Stints, so 1961 will recall the remarkable number of Black-tailed Godwits which passed through on passage.

It is a pity that the Spotted Crake recorded was dead, though it is probable that otherwise it would have passed through unnoticed. Even more obvious species must pass by unrecorded, but with the ever-increasing number of enthusiastic and reliable watchers these 'missed' birds must be getting fewer each year.

REPORT OF THE SPURN BIRD OBSERVATORY

(Compiled by G. H. Ainsworth and R. Chislett)

Ornithological visitors in 1961 included a coach-load from York on March 27th, following meetings of the British Ornithologists' Union there during the weekend; with them came the President, Mr. R. E. Moreau, and Lord Hurcomb. So many other parties from societies, schools, etc., came that the Management Committee of the Y.N. Trust Ltd. decided to prohibit organised parties in 1962 from April to August in the interests of the breeding birds. Some 400 people have stayed at the Cottage for varying periods, helping with the work. Working parties from schools, sponsored by Mr. C. J. Smith, organised and supervised by Toc H officials, and by our Warden, did a lot of useful work from mid-July to late August, including alterations to the Point trap; publicity in the press and on radio should not have been sought without permission.

By the death of Lt.-Col. H. G. Brownlow the observatory lost an enthusiastic friend. We shall miss Alfred Hazelwood's kindly advice as consultant concerning rarities and racial forms that we have had through the years.

The observatory was manned on all but two days in the year, on some days by the Warden only and no one person can give complete coverage. It is hoped our supporters will stagger their visits so as to add to the coverage without overcrowding at some weekends. This can only be done if bookings are made well in advance, and are fulfilled without heed for press exaggerations of supposed epidemics. Messrs. Bird, Stephenson, and Nettleton, in co-operation with Messrs. Willson of Patrington, have brought sacks of seed without which many fewer birds would have been caught.

We have never aimed to attract people who merely want a cheap holiday by the sea, but rather those keen enough ornithologically to put up with minor discomforts, and to observe the simple rules, for the privilege of staying with wild nature close around them. Some visitors have failed to observe the rule which says: 'The Cottage must be kept clean and tidy, and breakages made good.' Every party must do its share. Those who leave the place untidy, who do not dispose of their refuse, are letting themselves and the observatory down. The Warden has been instructed to draw visitors' attention to this rule.

Among the rarities recorded, Surf Scoter, Red-footed Falcon, and Serin Finch were new to the peninsula. Appearances of the more unusual drift migrants and vagrants were below average. Barnacle Goose came, and Sabine's Gull, Icterine and Yellow-browed Warblers, Richard's Pipit, Woodchat Shrike, and Ortolan Bunting.

Birds ringed in 1961 numbered 6,739, a goodly total but 979 smaller than in the record year of 1960, albeit still higher than in any other year. A year in which 1,475 Blackbirds were ringed (975 more than in 1960), and in which five other species (Wheatear, Pied Flycatcher, Hedge-Sparrow, Meadow-Pipit, and Starling) showed increases totalling to 253 might have been expected not to show a decrease. Never have we ringed so many birds in a day as on November 5th when the great Blackbird invasion came. Thrushes other than Blackbirds were fewer. Warblers of all species were down by 161 (easterly winds were less frequent). Finches did not come in such numbers as in 1960; fewer Linnets were ringed by 477; and Greenfinches, Chaffinches, Snow-Buntings, and House and Tree-Sparrows were collectively down by 761. Again this year we had no great influx of continental Robins and 534 fewer were ringed. Wheatears showed an increase following an extension of a low chalk wall under the W.D. trap. Velvet Scoter and Serin are new species for us to ring.

Recoveries were good, mainly resulting, as usual, from ringings of previous years. Six Blackbirds in Scandinavia and one in Poland were probably in their native areas, and five were wintering in the west of Ireland when recovered, as also was a Song-Thrush; and another was in Spain. A Spurn-ringed Song-Thrush in the Gironde Department of France in July was curious. A Spurn-ringed Redwing was in Finland on August 24th. A Chaffinch was well north of Trondheim in Norway in July. A hen House-Sparrow had travelled 38 miles north-west to Shiptonthorpe. A Tree-Sparrow caught on May 2nd had been ringed in Suffolk in November, 1960. The Blackbird owner of the ring found in an owl's pellet in Holland on April 3rd would probably have preferred to travel further. The 'Classified List' shows details of many others for fitting into the jigsaw.

RINGINGS OF THE SPURN BIRD OBSERVATORY, 1961

	Ringed in 1961	Total to 31/12/61		Ringed in 1961	Total to 31/12/61
Slavonian Grebe		1	<i>Brought forward</i>	254	2330
Storm Petrel		1	Long-tailed Tit	13	26
Cory's Shearwater		1	Bearded Tit		6
Fulmar		1	Tree-Creeper	1	4
Gannet		1	Wren	49	436
Shag		1	Mistle-Thrush		7
Mallard		2	Fieldfare	4	67
Scaup		1	Song-Thrush	192	1258
Long-tailed Duck		1	Kedwing	31	435
Common Scoter		1	Ring-Ousel	6	23
Velvet Scoter	1	1	Blackbird	1475	5853
Sheld-duck		2	Wheatear	37	209
Sparrow-Hawk		23	Stonechat	2	43
Merlin		2	Whinchat	24	257
Kestrel	5	26	Redstart	81	945
Red-legged Partridge	1	30	Black Redstart	2	52
Common Partridge	24	34	Nightingale	2	9
Pheasant		4	Bluethroat		16
Corncrake		1	Robin	147	2260
Water-Rail	2	13	Grasshopper-Warbler		5
Moorhen	2	15	Reed-Warbler	3	16
Oystercatcher		4	Sedge-Warbler	12	204
Lapwing		11	Icterine Warbler		9
Ringed Plover	14	139	Blackcap	27	191
Golden Plover		1	Barred Warbler	2	21
Turnstone		9	Garden-Warbler	25	344
Snipe		5	Whitethroat	137	1752
Jack Snipe		1	Lesser Whitethroat	5	84
Woodcock	3	10	Willow-Warbler	140	1931
Green Sandpiper		2	Greenish Warbler		3
Wood Sandpiper		5	Chiffchaff	14	182
Common Sandpiper		2	Wood-Warbler	2	17
Redshank		18	Yellow-browed Warbler	1	8
Greenshank		1	Pallas's Warbler		1
Knot		2	Goldcrest	99	787
Little Stint	1	4	Firecrest	1	2
Dunlin	21	218	Spotted Flycatcher	25	206
Curlew Sandpiper		2	Pied Flycatcher	98	842
Ruff		1	Red-breasted Flycatcher	3	29
Common Gull		6	Hedge-Sparrow	241	1210
Little Tern		77	Meadow-Pipit	80	990
Razorbill		2	Richard's Pipit		1
Little Auk		1	Rock-Pipit	1	7
Guillemot		9	Tree-Pipit	4	33
Puffin		2	Pied Wagtail		3
Wood-Pigeon		4	White Wagtail		1
Turtle Dove	3	9	Yellow Wagtail		8
Collared Dove		1	Waxwing	2	3
Cuckoo	19	139	Great Grey Shrike		7
Barn Owl	1	3	Woodchat Shrike		1
Little Owl	1	7	Red-backed Shrike		11
Tawny Owl		1	Starling	236	1507
Long-eared Owl		5	Hawfinch		1
Short-eared Owl		1	Greenfinch	1029	4928
Swift		3	Goldfinch	4	42
Hoopoe		1	Siskin	23	44
Great-Spotted Woodpecker		4	Linnet	195	4061
Wryneck	1	33	Redpoll	17	39
Short-toed Lark		1	Serin	1	1
Skylark	40	308	Bullfinch	2	4
Shore-Lark	6	10	Scarlet Grosbeak		2
Swallow	49	443	Crossbill		6
House-Martin		2	Chaffinch	220	2895
Sand-Martin		36	Brambling	51	790
Carrion Crow		3	Yellowhammer	21	144
Rook	9	15	Corn Bunting	1	29
Jackdaw		12	Red-headed Bunting		1
Magpie	1	23	Ortolan Bunting		1
Jay		1	Reed-Bunting	67	818
Great-Tit	17	146	Lapland Bunting		3
Blue-Tit	27	354	Snow-Bunting	17	1975
Coal-Tit	5	66	House-Sparrow	1472	6927
Willow-Tit		5	Tree-Sparrow	141	409
<i>Carried forward</i>	254	2330	Total	6739	47772

BIRDS RE-TRAPPED IN 1961, RINGED IN PREVIOUS YEARS

1961	1960	1959	1958	1957	1956	1955	1954
6 Skylark	4	—	—	1	1	—	—
2 Blue-Tit	1	1	—	—	—	—	—
3 Song-Thrush	3	—	—	—	—	—	—
2 Sedge-Warbler	2	—	—	—	—	—	—
14 Whitethroat	8	6	—	—	—	—	—
21 Hedge-Sparrow	16	5	—	—	—	—	—
2 Starling	—	—	2	—	—	—	—
32 Linnet	31	1	—	—	—	—	—
9 Greenfinch	6	3	—	—	—	—	—
2 Chaffinch	2	—	—	—	—	—	—
3 Yellowhammer	3	—	—	—	—	—	—
17 Reed-Bunting	9	5	3	—	—	—	—
109 House-Sparrow	46	46	7	3	5	1	1
222	131	67	12	4	6	1	1

The 450 pages of matter that comprises the Spurn Log for 1961 included several pages on some days and less than a page on others. Items came from almost every part of the area; but especially from the 'Narrow Neck', where flight lines converge, and from which too the sea can be watched for passing ducks and divers, skuas and shearwaters, and many others. In the 'Classified List' the log is condensed selectively, in an attempt to present as true a picture as possible for each species as the space allows. Dates were selected in the table that follows because they show peaks of the autumn movement for birds that pass in numbers, in great numbers sometimes. Ticks mean that the species was not counted or estimated on that day; dashes that none occurred. Peak days for the Thrush tribe are tabulated in the 'Classified List'.

DAYS OF MAXIMUM PASSAGE IN AUTUMN OF SELECTED SPECIES SHOWING ESTIMATE OF NUMBERS

	July 26	Aug. 22	Sept. 11	Sept. 12	Sept. 17	Oct. 7	Oct. 9	Oct. 14	Oct. 27	Oct. 29	Oct. 31	Nov. 7
Swift	1800	10	19	2	—	—	—	—	—	—	—	—
Skylark	√	√	40	90	225	√	100	350	450	1100	√	1000
Swallow	30	1000	5075	3175	2900	310	200	126	42	60	2	—
House-Martin	1	—	257	36	18	—	140	2	17	19	—	—
Sand-Martin	124	30	203	50	14	—	—	—	—	—	—	—
Robin	—	1	2	—	1	70	30	20	6	6	√	5
Meadow-Pipit	√	√	600	1850	5987	120	1200	190	120	200	√	600
Goldcrest	—	—	—	—	10	130	10	15	12	10	1	2

In proposing the toast of the Y.N.U. at the Centenary Dinner on December 1st, Mr. E. M. Nicholson coupled my name with a question someone had asked: 'Why should birds have to carry rings?' to which I had no opportunity for reply. Well! Why should they not? That the modes of life of tits and other species, their mobility, their longevity, are unhampered by a ring on one leg, I have ocular proof outside my window every day, verified by recoveries and in other ways. Warblers, finches, thrushes return each summer to the areas in which they were ringed, as a prior tabulation shows. Provided the ring is properly put on I doubt if it makes any difference to them. I have known occasional accidents, in two cases because rings were closed insufficiently, and thorn and wire got caught in the too wide-open space round the leg. More harm can come from trapping than from ringing; and it behoves us to take every precaution possible. The mist-net user who left his net unwatched and found it had been cut down in his absence, had been treated justly in my opinion. If properly carried out ringing combines a method of exact study with a minimum of harm to birds; far less than is caused in the declared interests of science by some other methods. (R.C.)

Recoveries of Yorkshire Ringed Birds
(and of birds ringed elsewhere and recovered in Yorkshire)

Compiled by John R. Mather

The list of recoveries which follows is highly selective, listing only those which are of special interest with regard to the species concerned. Very many more have been notified and there are numerous records of summer visitors being re-trapped on passage or in their breeding areas. The large number of recoveries of Swallows and Sand Martins will indicate the value of the work done at the Fairburn Hirundine ring and elsewhere. The Roeburndale gullery continues to produce its crop of Lesser Black-backed Gull recoveries from Portugal, and all except one of the Linnets reported from abroad were in the expected corner in S.W. France.

It is obvious from the very large number of recoveries notified, that a great many birds are being ringed annually in Yorkshire, and it would be interesting to publish a grand total for the county. (It is possible that it would be in excess of 30,000.) Could all ringers send a copy of their annual totals list to their recorders for 1962 (including only Yorkshire ringed birds of course).

Recoveries are listed in 'date of ringing' order and the symbols for manner of recovery are those used in the 'Report for Bird Ringing' in *British Birds* and 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

SHAG			
5000601	Pull.	11-7-60	Eynhallow, Orkney.
	×	21-10-60	Barnston, Bridlington.
			per B.T.O.
MALLARD			
AF 9071	Juv.	13-7-58	Fairburn.
	+	2-4-61	Korotoyak (Veronezh), USSR. (50°59'N., 39°11'E.)
AJ 38318	Juv. ♂	18-10-60	Caught Peakirk, Northants.
		18-10-60	Released Long Sutton, Lincs.
	+	29-12-61	Near Gouthwaite Reservoir, 120 miles NW.
			Wildfowl Trust.
TEAL			
3048562	Pull.	3-7-60	Gouthwaite Reservoir.
	+	18-1-61	St. Michaels-on-Wyre, Lancs., 44 miles WSW.
			S.S.W.
MUTE SWAN			
Z 1815	2nd W.	28-8-60	Hornsea Mere.
	×	6-11-61	Driffield, 11 miles NW.
			G.R.B.
Z 1820	3rd W.	4-9-60	Hornsea Mere.
	v	31-8-61	Whittlesey, Cambs., 93 miles S.
			G.R.B.
Z 2787	Ad. ♀	2-4-61	Otley.
	v	4-6-61	Fairburn, 18 miles SE.
			J.R.M.
Z 4060	Pull.	6-7-61	Long Marston, near York.
	×	27-12-61	Wombwell, near Barnsley, 29 miles SSW.
			J.R.M.
HEN HARRIER			
3071303	Pull.	1-7-60	Firth, Orkney.
	×	31-1-61	High Grantley, 340 miles SSE.
			E.B.
MOORHEN			
AJ 12202	Ad.	26-3-61	Ossett Spa S.F.
	[?/]	26-7-61	Newton Burgoland, Leicester, 68 miles S.
			A.F.
OYSTER CATCHER			
342205	Pull.	28-7-59	Spurn.
	v	3-4-61	Holbeach Marsh, Lincs., 50 miles S.
			S.B.O.

LAPWING

2008615	Pull.	14-5-58	Knaresborough.	
	×	5-7-61	Near Midsland, Terschelling, Netherlands. (53°24'N., 5°15'E.)	J.R.M.
2032605	Pull.	17-6-60	Middlesmoor, near Pateley Bridge.	
	+	17-12-61	Carneville (Manche), France. (49°41'N., 1°28'W.)	S.S.W.

GOLDEN PLOVER

299832	Pull.	18-6-57	Allenheads, Northumberland.	
	+	12-1-60	Stanley, Wakefield, 80 miles SSE.	per B.T.O.

SNIPE

R 20726	F.G.	31-7-59	Ilkley.	
	+	1-1-61	Multyfarnham, Westmeath, Ireland, 225 miles W.	W.N.S.
R 20554	F.G.	4-10-59	Ilkley.	
	+	10-10-61	Near Randers (Jutland), Denmark. (56°28'N., 10°03'E.)	W.N.S.
724431	F.G.	29-10-60	Knaresborough S.F.	
	+	13-11-61	La Fleix (Dordodgne), France. (44°52'N., 0°16'E.)	J.R.M.

WOODCOCK

251442	F.G.	16-10-60	Spurn.	
	[?]	25-7-61	Karrgruvan, Västmanland, Sweden. (60°04'N., 15°34'E.)	S.B.O.

REDSHANK

V 81290	F.G.	1-9-58	Holbeach Marsh, Lincs.	
	×	5-7-60	Near Easingwold, 100 miles NW.	per B.T.O.
037415	Pull.	9-6-61	Fairburn	
		26-9-61	Île D'Olron (Chearente Maritime) France (45°55'N., 1°16'W.)	A.F.

DUNLIN

64422 X	F.G.	23-11-60	Spurn.	
	[?]	20-8-61	Near Nibe, Linnfjorden, Jutland. (56°59'N., 9°39'E.)	S.B.O.

LESSER BLACK-BACKED GULL

Three ringed as pulli at Roeburndale by D. B. Iles have been recovered in Portugal, one in its tenth year, and one in Anglesey, North Wales (100 miles SW.).

BLACK-HEADED GULL

3033453	Pull.	18-6-61	Near Haworth.	
	[?]	29-10-61	Sandymount, near Dublin, 175 miles WSW.	D. & Q.

KITTIWAKE

2020835	Pull.	3-7-60	Scarborough.	
	v	5-1-61	Bay of Biscay, off Castro Urdiales, Spain. (43°35'N., 3°15'W.)	J.R.M.

PUFFIN

AT 45645	Ad. ♂	20-4-57	Farne Islands, Northumberland.	
	×	27-5-61	Spurn, 158 miles SSW.	per S.B.O.
AT 51397	Pull.	7-7-59	Farne Islands, Northumberland.	
	[?]	3-4-60	Barmston, near Bridlington, 120 miles SSE.	per B.T.O.

COLLARED DOVE

251429	F.G.	9-5-60	Spurn.	
	v	14-1-61	Skegness, Lincs.	S.B.O.

LITTLE OWL

3002423	F.G.	14-12-58	Little Crosby, Lancs.	
	×	26-4-60	East Witton, near Leyburn, 70 miles NE.	per B.T.O.

SWALLOW

K 77977	F.G. ♀	30-5-59	Spurn.	
	+	15-5-61	San Bartolomeo Del Cerva (Imperia), Italy. (43°56'N., 8°07'E.)	S.B.O.
J 37259	Pull.	21-7-59	Mickletown, Castleford.	
	×	19-10-60	Cèrızay (Deux Sevres), France. (46°49'N., 0°40'W.)	per B.T.O.
AA 47308	Ad.	5-6-60	Ackworth, Pontefract.	
	×	19-10-60	Near Bordeaux (Gironde), France. (44°50'N., 0°34'W.)	A.S.
AA 5207?	Pull.	21-6-60	Earby.	
	+	8-10-60	Orlu, Nigeria. (5°50'N., 7°05'E.)	per B.T.O.
AA 73188	Juv.	6-8-60	Fairburn.	
	×	16-1-61	Vryheid (Natal), S. Africa. (27°45'S., 30°48'E.)	C.W.
AA 86276	1st W.	12-9-60	Sandwich, Kent.	
	v	19-9-61	Fairburn, 200 miles NW.	per C.W.
AA 98617	Juv.	23-9-60	Fairburn.	
	()	4-11-60	Bir Enzarán, Spanish W. Africa. (23°56'N., 14°33'W.)	C.W.
AA 98109	1st W.	24-9-60	Fairburn.	
	×	31-12-60	Ladysmith, S. Africa. (28°34'S., 29°47'E.)	C.W.
AC 34929	Ad.	4-9-61	Fairburn.	
	v	25-9-61	Near Tournai (Hainant), France. (50°35'N., 3°29'E.)	C.W.
AC 46647	Ad.	23-9-61	Fairburn.	
	×	8-10-61	Near St. Vrieix-la-Perche (Haute-Vienne), France. (45°31'W., 1°12'E.)	C.W.

Six pulli Swallows ringed in the Summer of 1961 in Yorkshire (3), Northumberland (2) and Westmorland (1) were re-trapped at the Fairburn roost in August (2) and September (4).

HOUSE MARTIN

K 26569	Ad. ♂	11-6-58	Harrogate.	
	×	15-6-61	Den Burg, Texel, Netherlands. (53°03'N., 4°47'E.)	S.S.W.
88291	Juv.	20-9-60	Folkestone, Kent.	
	/?	26-5-61	Dunsville, near Doncaster 190 miles NW.	T.G.

SAND MARTIN

J 61400	Juv.	3-8-59	Sandwich, Kent.	
	v	31-8-60	Fairburn, 200 miles NW.	per C.W.
AA 90691	Juv.	7-9-60	Fairburn.	
	v	19-9-60	Sandwich, Kent, 200 miles SE.	C.W.
AA 90752	Juv.	9-9-60	Fairburn.	
	×	17-6-61	Bonnybridge (Stirlingshire), 185 miles NW.	C.W.
AA 90960	Juv.	17-9-60	Fairburn.	
	v	2-7-61	Kineraig (Inverness), 250 miles NNW.	C.W.
AB 80033	Ad.	24-6-61	Near Kelso (Roxburgh).	
	v	2-8-61	Fairburn, 132 miles SSE.	per C.W.
H 26929	F.G.	1-7-61	Papplewick (Notts.).	
	v	9-8-61	Fairburn, 46 miles NW.	J.A.S.B.
H 27685	Juv.	10-7-61	Knaresborough S.F.	
	v	30-7-61	Littlebourne, Kent, 215 miles SE.	J.R.M.

In addition were five adults and one juvenile ringed in June 1961 in Northumberland and Durham and recovered at the Fairburn roost in August. H 26929 is the only bird ringed in the Summer of 1961 to be re-trapped at the roost, having approached from the south. Eight birds ringed in 1960 and seventeen ringed in 1961 in Yorkshire were re-trapped there in July (1), August (24) and September (1) and two ringed in 1959 and 1960 were re-trapped on Spring passage in April 1961. All had originally been ringed to the north-west of Fairburn.

ROOK

3034161	Ad.	8-11-61	Spurn.	
	+	7-12-61	Sporle, near Swaffham, Norfolk, 68 miles SSE.	S.B.O.

SONG-THRUSH

R 23851	FG.	16-11-58	Willerby, Hull.	
	×	27-11-61	Port Lavise, Leix, Ireland.	D.J.M.
			This bird was colour ringed and was seen at Willerby in December 1958, throughout 1959 (feeding young in May 1959), 1960, and in February 1961.	
V 89798	F.G.	15-10-59	Spurn.	
	/?/	13-7-61	Lussac (Gironde), France. (44°56'N., 0°06'W.)	S.B.O.
R 73687	F.G.	28-2-60	Spurn.	
	×	19-11-61	Lemona (Vizcaya), Spain. (43°13'N., 2°46'W.)	S.B.O.
R 82961	Pull.	9-4-61	Wath, near Pateley Bridge.	
	+	22-10-61	Lamarque (Gironde), France. (45°06'N., 0°42'W.)	S.S.W.

REDWING

V 16560	F.G.	3-11-57	Spurn.	
	+	24-8-61	Laniwassalo, near Pielavesi (Knopio), Finland. (63°15'N., 26°40'E.)	S.B.O.

BLACKBIRD

V 44879	1st W. ♀	14-12-57	Ossett Spa S.F.	
	v	19-2-60	Glenties, Donegal.	
	+	2-8-61	Glenties, Donegal.	A.F.
06312 X	?	22-10-60	Portland Bill, Dorset.	
	v	6-8-61	Adwick-le-street, 215 miles NNE.	R.J.R.

East coast ringed Blackbirds were the only ones to cross the North Sea, viz., nine birds ringed October to January at Spurn (7), Hornsea (1) and Hull (1) were recovered March to September in Sweden (3), Norway (2), Denmark (2), Holland (1) and Poland (1). Two others ringed at Spurn in October of 1959 and 1960 were in Galway and Mayo, Eire, in November and December 1961 respectively.

REDSTART

AA 19313	Pull.	10-6-60	Sedbergh.	
	/?/	2-11-60	Andujar (Jaén), Spain. (38°02'N., 4°03'W.)	per B.T.O.

ROBIN

AA 13666	F.G.	13-10-60	Spurn.	
	Found in		Long-eared Owl's pellet	
		7-4-61	Den Burg, Texel, Netherlands. (53°03'N., 4°47'E.)	S.B.O.
AB 03417	F.G.	18-10-60	Spurn.	
	×	22-10-61	Sint Anna Bosch, Uloenhout (Noord Brabant), Netherlands. (51°32'N., 4°50'E.)	S.B.O.

BLACKCAP

AA 13540	F.G.	2-10-60	Spurn.	
	/?/	2-3-61	Facinas (Cadiz), Spain. (36°09'N., 5°51'W.)	S.B.O.

WILLOW-WARBLER

C 58208	F.G.	4-5-57	Bradwell-on-Sea, Essex.	
	×	20-5-60	Burnt Yates, Ripley, 175 miles NW.	per B.T.O.
25608	Juv.	4-8-57	Dungeness, Kent.	
	×	27-4-60	Walton, Wakefield, 215 miles NW.	per B.T.O.
J 98838	Ad.	7-5-60	Ilkley.	
	+	26-8-61	Covelo (Pontevedra), Spain. (42°14'N., 8°22'W.)	W.N.S.

MEADOW-PIPIT

J 98845	Ad.	7-5-60	Ilkley.	
	+	6-1-61	Algorta (Viseaya), Spain. (43°20'N., 3°00'W.)	W.N.S.
J 92329	Juv.	1-6-60	Blubberhouses.	
	×	?-10-60	Le Boucau (Basses Pyrenees), France. (43°30'N., 1°30'W.)	per B.T.O.
J 30647	Pull.	7-6-60	Harrogate.	
	+	10-1-61	Near Faro (Algarve), Portugal. (37°01'N., 7°56'W.)	Maj. C.W.
J 36432	Pull.	13-6-60	Wainstalls.	
	+	7-10-60	St. Martin (Gironde), France. (43°33'N., 1°22'W.)	per B.T.O.
AB 05895	F.G.	12-9-61	Spurn.	
	×	4-11-61	Iuijas, near Lisbon, Portugal. (38°43'N., 9°10'W.)	S.B.O.

PIED WAGTAIL

AA 76747	Juv.	8-9-60	Ossett Spa S.F.	
	[?]	2-1-61	Angeiras (Douro-Litoral), Spain.	A.F.

STARLING

Six Starlings, ringed in Yorkshire in the Winter, were recovered abroad as follows: Denmark (1), Germany (1), Finland (1), Belgium (1), Vitebsk, USSR. (1), Sweden (1).

GREENFINCH

54645 X	Juv.	16-10-60	Ilkley.	
	×	2-8-61	Shilbottle, Northumberland, 100 miles N.	W.N.S.
S 60113	F.G. ♀	6-4-58	Spurn.	
	v	6-2-61	Gosforth, Newcastle, 115 miles NW.	S.B.O.

Nine others (7 from Spurn and 2 from Ilkley) were recovered at distances up to 40 miles, having 'exploded' in almost every direction except due East!

LINNET

K 52970	Pull.	6-6-59	Knaresborough.	
	×	15-11-59	St. Geours de Marenne (Landes), France. (43°41'N., 1°14'W.)	S.S.W.
J 87763	F.G. ♂	23-4-60	Spurn.	
	+	15-10-60	Soustons (Landes), France. (43°45'N., 1°19'W.)	S.B.O.
AA 76745	Juv.	8-9-60	Ossett Spa.	
		1-7-61	Ossett Spa.	
		27-10-61	Blanquefort (Gironde), France. (44°55'N., 0°37'W.)	A.F.
AA 99032	Ad. ♂	13-10-61	Portland Bill B.O., Dorset.	
	v	17-4-61	Ossett Spa S.F., 220 miles NNE.	A.F.
AB 70641	Pull.	14-7-61	Ossett Spa.	
		30-10-61	Le Haillen (Gironde), France. (44°53'N., 0°41'W.)	A.F.
AB 98749	F.G.	18-7-61	Sprotborough Flash.	
	+	25-10-61	Tarifa, Cadiz, Spain. (36°01'N., 5°36'W.)	R.J.R.
AC 17973	Juv.	9-8-61	Sprotborough Flash.	
		16-11-61	Soustons (Landes), France.	R.J.R.
J 22078	Ad. ♀	20-9-61	Ossett Spa S.F.	
		26-10-61	St. Germain du Puch (Gironde), France. (43°55'N., 0°14'W.)	A.F.
640441	FG ♀	21-9-61	Knaresborough.	
	+	16-10-61	St. Martin de Seignaux (Landes), France. (43°33'N., 1°22'W.)	J.R.M.

RÉDPOLL

AA 16067	F.G.	21-2-60	Near Christchurch, Hampshire.	
	[?]	end 6-60	Near Scarborough, 250 miles NNE.	per B.T.O.
J 62702	Ad. ♂	21-2-60	Near Christchurch, Hampshire.	
	×	8-7-60	Near Ingleton, 235 miles N.	per B.T.O.
J 22091	Ad.	23-9-61	Newmillerdam.	
		15-10-61	Armentières (Nord), France. (50°41'N., 2°53'W.)	A.F.

CHAFFINCH

K 37472	F.G. ♂	8-4-58	Spurn.	
	[?]	27-7-61	Namsos (Nord Trondelag), Norway. (64°28'N., 11°30'E.)	S.B.O.
J 20313	F.G. ♀	7-10-59	Spurn.	
	v	6-11-61	Kennemerduinen, Noord, Holland. (52°25'N., 40°33'E.)	S.B.O.
J 86147	Ad. ♂	28-3-60	Spurn.	
	×	4-4-60	Hallum (Friesland), Netherlands. (53°18'N., 5°47'E.)	S.B.O.

BRAMBLING

J 83141	Ad. ♂	11-10-59	Spurn.	
	v	26-3-61	Brasschaat (Antwerpen), Belgium. (51°17'N., 4°30'E.)	S.B.O.

HOUSE-SPARROW

J 85994	F.G. ♀	15-1-60	Spurn.	
	×	17-6-60	North Cave, Market Weighton, 32 miles WNW.	S.B.O.
J 86010	F.G. ♀	17-1-60	Spurn.	
	+	14-11-61	Shiptonthorpe, near Market Weighton, 38 miles NW.	S.B.O.
AB 04837	F.G. ♀	3-4-61	Spurn.	
	+	5-6-61	Lebberston, near Scarborough, 46 miles NNW.	S.B.O.

Six others from Spurn were recovered west to north-west at distances between 9 and 25 miles.

TREE-SPARROW

H 23648	F.G.	16-11-60	Westleton, Suffolk.	
	v	2-5-61	Spurn, 110 miles NW.	H.E.A.
H 75040	F.G.	22-10-61	Knaresborough.	
	v	29-10-61	Fairburn, 19 miles SSE.	J.R.M.

List of Birds Ringed Abroad and Recovered in Yorkshire

MALLARD

H 18274	F.G. ♀	4-6-57	Kempele, Finland. (64°58'N., 25°27'E.)	
	+	11-12-60	Near Doncaster c. 1,940 Kms. SW.	per H.E.S.
?	Ad.	3-8-61	Meetkerke (Brugge), Belgium.	
	+	11-12-61	Witherwick, E. Yorks.	per B.S.P.

LAPWING

Leiden				
366067	Pull.	1-6-57	Texel, Netherlands. (53°06'N., 4°47'E.)	
	×	10-9-57	Melton.	per B.T.O.

DUNLIN

St.				
242674	Ad.	27-7-58	Ottenby, Sweden. (56°13'N., 16°25'E.)	
	+	12-1-61	Baswick Steer, near Leven.	C.H.V.
St.				
211237	1st W.	21-9-57	Ottenby.	
	+	12-1-61	Baswick Steer, near Leven.	C.H.V.
St.				
3003293	1st W.	14-9-60	Ledskär, Sweden. (60°30'N., 17°38'E.)	
	×	11-11-60	Tees Estuary.	per B.T.O.
C.				
852372	1st W.	15-9-55	Amager, Denmark. (55°40'N., 12°38'E.)	
	×	5-2-56	Middlesbrough.	per B.T.O.

GREAT BLACK-BACKED GULL

Stav.				
418621	Pull.	6-7-58	Tranøy (Troms), Norway. (69°02'N., 17°15'E.)	
	×	27-1-59	Tingley.	per B.T.O.

BLACK-HEADED GULL

?	Pull.	26-6-59	Norder Rønnes, Kattegat, Denmark. (57°22'N., 10°56'E.)	
	×	15-6-61	Near Barmston, Bridlington.	per A.D.B.
Larsson				
AZ 13	Pull.	10-6-60	Norrköping, Östergötland, Sweden.	
	×	28-12-61	Bridlington.	per A.B.
Stav.				
645324	Pull.	14-6-60	Sele, near Stavanger, Norway.	
	×	15-4-61	Knaresborough.	per J.R.M.

ARCTIC TERN

M.				
F 289706	Pull.	22-6-55	Puhtu, Estonian S.S.R. (58°33'N., 23°31'E.)	
	×	11-8-60	Oswaldkirk.	per B.T.O.

BLACKBIRD

7357033	Ad. ♀	1-11-59	Heligoland.	
		31-12-61	Adwick-le-Street.	per R.J.R.

GREY WAGTAIL

Port.				
1895	F.G.	27-10-54	Mindelo, Portugal. (41°19'N., 8°41'W.)	
	v	12-4-57	Near Sheffield.	per B.T.O.

KEY TO INITIALS

H. E. Axell, A. Bell, A. D. Buffey, E. Balfour, J. A. S. Borrett, G. R. Bennett, A. Frudd, T. Grant, D. J. Millin, J. R. Mather, Spurn Bird Observatory, B. S. Pashby, Dickens & Quinn, R. J. Rhodes, Ackworth School, H. E. Scott, Wharfedale Naturalists' Society C. Winn, Major C. Worin, Sanderson, Summersgill & Walker, C. H. Voase.

CLASSIFIED LIST

(B.O.U. CHECK LIST (1952) ORDER. HANDBOOK NUMBERS BEHIND)

1-4. Divers. Some could usually be seen on the sea at Spurn from January to March, with maximum activity January 14th (330 recorded), February 11th and 12th (up to 280), February 18th (c. 140), February 28th (c. 220) and March 4th (c. 160). In the autumn first noted on August 3rd, with the main passage in September to October. Most were Red-throated or unidentified.

1. Black-throated Diver (378).—One in nearly complete breeding dress at Atwick on March 5th (G.R.B.) and one on March 14th (A.D.B.). One at Spurn on September 6th. One retaining some breeding plumage at Flamborough on November 19th (G.R.B.).

2. Great Northern Diver (376).—Two recorded at Thrybergh Reservoir in 1960 stayed into 1961, both as late as February 26th (R.F.E.B.) and one up to April 4th (D.K.). Recorded at Spurn on January 3rd and 4th, and four on September 20th. One at Winterset Reservoir on January 11th to 13th (A.A. *et al.*), and a bird at Ingbirchworth Reservoir on October 28th stayed until November 8th (P.G.R.B. and C.J.D.).

4. Red-throated Diver (379).—At Redcar seen in rather smaller numbers than usual (D.R.S.). Seven circled over South Gare on October 28th (D.G.B.). Away from the coast—one at Fairburn January 7th to 15th, one on Blackmoorfoot Reservoir on February 12th (O.S.W.), one on Osmotherley Reservoir April 2nd to 7th (W.A. *et al.*).

5. Great Crested Grebe (370).—Bred on at least ten waters. Build up in breeding areas seems to have been earlier than usual. At Worsborough Reservoir where six pairs nested, single birds seen in January built up to a maximum of 29 by March 28th (A.A. and C.B.). At Spurn occurred twice in February, four times in April, four birds on July 30th and fewer on seven dates to October 15th.

6. Red-necked Grebe (371).—One off Filey Brigg on January 1st and 28th (R.H.A.) was probably same bird recorded in December, 1960. Two flying north-west settled on water off Redcar on September 1st (D.R.S., A.F.G.W.).

7. Slavonian Grebe (373).—One off Kilnsea (G.R.B. *et al.*), and one at Filey Brigg on October 14th (R.H.A.). At Hornsea three seen on October 22nd, and single birds on October 28th and 29th, and November 4th (G.R.B.). One on farm pond at Flamborough on November 20th (A.J.W.).

8. Black-necked Grebe (374).—At Hornsea Mere single birds on October 28th, October 29th (two) and seven dates between November 12th and December 3rd (G.R.B.). At Fairburn one on April 28th and 30th, and two on September 2nd.

9. Little Grebe (375).—Status remained normal. Large assemblies recorded include 30 at Fairburn on August 19th and 27th, 40 at Swillington on August 23rd, 54 at Woodhouse Mill on September 1st (R.A.F.), 30 at Hoyle Mill Dam, Hemsworth, on October 18th (M.N.R.). Six seen on River Wharfe at Harewood Bridge during cold spell on December 26th. Bred at Scaling Dam for the first time (D.G.B.), and three on Roundhill Reservoir on October 16th must have been wanderers (P.Y.).

14. Storm Petrel (350).—One at Spurn on September 6th.

16. Manx Shearwater (355).—At Spurn occasionally seen in May to July, and more often to late September, maximum 13 on September 4th. Further north numbers were higher in June and July with very low figures for August and September. At Hornsea on June 25th 41 passing included a party of 19 (G.R.B.), at Filey Brigg 48 passed on July 15th (R.H.A.). Considerable coastal movement was recorded in the Tees area in June, with c. 50 on the sea off Staithes on June 22nd (H.R.) and nine at South Gare on June 23rd (D.G.B.).

21. Sooty Shearwater (363).—At Spurn occurred with two on August 30th, three on August 31st, five on September 4th, and single birds on September 7th and 8th and October 19th. At Hornsea single birds on August 19th, September 10th, and October 8th, with three on November 11th, and two on November 13th (G.R.B.). Two at Filey Brigg on July 15th (R.H.A.) were very early, where one was seen on September 20th (R.H.A.).

26. Fulmar (368).—Noted more frequently than usual at Spurn from January to the last on September 24th. Spring figures rose to a maximum of *c.* 200 on June 12th. After 50 on July 4th numbers were fewer. Inland one was seen at Highcliff, Guisborough on April 29th, where a pair were seen on several occasions during June (D.G.B.). One circled over Roseberry Topping on June 4th (I.F.S.), one over Hull on July 19th (D.T.B.), and one at Fairburn on September 21st.

27. Gannet (349).—At Bempton six young were counted on the nine nesting sites on August 7th (H.O.B.). This count includes one new nest. Coastal movements were normal. At Spurn was recorded in every month (once only in December).

28. Cormorant (346).—Status along the coast showed no changes. Except for five and two flying over Fairburn on April 9th, three on July 21st, and four at Winterset Reservoir on July 20th (M.N.R.), all of the many inland records were of single birds.

29. Shag (348).—Three nests were seen on open ledges at Flamborough (A.J.Ws.). All previously reported nests have been in caves and crevices. Large parties along the coast include 19 at Filey Brigg on March 18th (B.R.), 15 on April 8th, 14 on April 29th (R.H.A.), 28 at Reighton on April 2nd (R.K.) and 11 off Aldbrough on December 2nd (G.R.B.). Inland one flew round Ferrybridge Power Station (A.C.) and an immature flew over Fairburn (C.W.), both on October 31st.

30. Heron (289).—At Hornsea Mere there were 12 occupied nests on April 22nd (H.O.B.), at Whixley nine occupied nests, all rearing young (J.R.M.), and at Coniston Cold only three birds seen on April 23rd, with no breeding records (K.H.). Maximum numbers recorded included 15 at Eccup Reservoir on August 15th, ten at Scaling Dam and four at Lockwood Beck Reservoir on September 1st (D.G.B.), 19 at Blaxton on October 8th (A.E.P., J.B.), and ten at Gouthwaite on December 24th. On the coast recorded at Spurn in every month from February to November, usually single birds, two or three seldom, and four on September 1st, and eight on September 4th. Birds flew north-west at Redcar on four dates in September, two on September 18th, one on October 21st (D.R.S.) and one came in off the sea at South Gare on November 5th (D.G.B.).

38. Bittern (297).—One found dying near Aldbrough on February 2nd (B.S.P., R.S.P.C.A.). Single birds at Fairburn on August 27th, September 18th, October 8th and November 25th. One found exhausted at Aberford on December 17th (per C.S.), and one seen at Talbot Bridge, near Clitheroe on December 13th (T.H. per K. G. Spencer). One at Potteric Carr on April 11th (R.D.M.); one near Arksey in November (per R.J.R.); one at Almholme on December 9th (R.J.R.).

42. Spoonbill (287).—One at Hornsea Mere on May 14th (L.B., A.C., H.L.).

45. Mallard (317).—The spring pattern showed high numbers in January, dropping sharply by the end of March on all waters where counts were made. Autumn numbers were between one and a half to twice normal at some inland waters, with counts of *c.* 1,400 at Cherry Cobb Sands on December 2nd (G.R.B.). Fairburn 1,500 on October 28th, Eccup 1,550 on November 26th, Gouthwaite *c.* 630 on November 26th, Lindley Reservoir *c.* 1,000 on December 23rd, Leighton Reservoir *c.* 1,000 on October 15th (E.E.J.), Blaxton-Finningley *c.* 550 on November 19th (A.E.P., J.B.), Hornsea Mere *c.* 3,100 on December 2nd (G.R.B.), Whitton Sand *c.* 3,200 on December 18th (T.B.R.) and Spurn 484 on November 26th.

46. Teal (319).—Maxima at Spurn were *c.* 118 on August 30th, and *c.* 200 on November 6th and 7th, which passed south on each day. At Hornsea Mere numbers fell steadily from *c.* 870 on January 1st to *c.* 20 throughout April to September, rising again to 1,400 on October 8th, and remaining at 700-800 from late October to early December (G.R.B.). Numbers increased from *c.* 700 on January 1st to *c.* 1,000 on March 5th and 19th on the Lower Derwent Floods (M.R.S., A.F.G.W.). The Humber refuge had *c.* 450 on August 26th, *c.* 770 on September 27th, *c.* 540 on December 2nd (T.B.R.). Fairburn had its spring peak of 400 on January 1st, and in the autumn *c.* 400 on October 22nd, and *c.* 600 on December 3rd, dropping to *c.* 40 by December 29th during the cold spell. Other peaks are *c.* 110 at Thrybergh Reservoir on December 16th (R.J.R.), *c.* 350 at Blaxton on October 1st (A.E.P.,

J.B.). A small north-west passage of birds at Redcar on six days between August 30th and November 5th (D.R.S.). Gouthwaite had a very good breeding season, by July 5th there being at least 16 broods totalling 86 ducklings (A.F.G.W.).

47. Garganey (322).—Birds present at Fairburn from April 6th to September 16th with maxima of ten on August 7th. Recorded at Hornsea, two on March 26th, and on ten dates between May 13th and October 1st, with maximum of four on August 7th (G.R.B., A.D.B.). A male at Broomhill on three days in August (D.J.S., G.R.A.) and a male at Denaby Ings on September 1st (J.B.H., A.E.H.). A pair bred near Doncaster (R.J.R. *et al.*), and a pair were seen at Filey Brigg, an unusual locality, on April 29th (R.H.A., E.J.W.). A pair frequented the lagoons at Spurn between March 24th and April 7th, where one also appeared on July 27th.

49. Gadwall (318).—The large numbers at Hornsea during the winter of 1959-60 were not repeated. From two to three were present in every month, with five on January 1st, and seven on September 3rd (G.R.B.). Fairburn records can be summarised as follows: 12 on February 12th, 18 on March 28th, 20 on April 15th, 8 to 11 from May to July, 15 on August 17th, 52 on August 24th, 47 on September 13th, 32 on October 8th, 12 on November 5th, and six on December 26th. Also recorded from Patrington Haven, Scaling Dam, Winterset Reservoir, Nostell Dam, Southfields Reservoir, Eccup, Swillington, Gouthwaite (five on August 28th were most unusual (A.F.G.W.)), Harewood, Copgrove, Leventhorpe Lake and Tarn House Reservoir. The majority of records were made in August to October.

50. Wigeon (323).—The Lower Derwent Floods again had a spring peak of almost 5,000 on February 12th, which had halved by March 19th, the last date of recording (A.F.G.W.). At Hornsea also the spring peak of *c.* 900 on February 18th had dropped to nine on March 26th. Up to 13 summered on the Mere and were seen throughout April to July (G.R.B.). A spring peak of *c.* 400 at Cherry Cobb Sands on March 19th (B.S.P., A.M.G.) was exceeded by an autumn count of *c.* 490 on December 2nd (G.R.B.). Gouthwaite had a wintering flock up to March 18th, varying between 65 and 110. Six returned by September 6th, building up steadily to between 90 and 110 in November and December (A.F.G.W.). About 150 on January 15th was peak at Stocks Reservoir where no large numbers returned in the autumn (J.K., & A.E.F.). The first returned to Blaxton on September 24th, with maximum of 80 on December 26th (A.E.P., J.B.). At Spurn followed the usual pattern in the spring. Autumn maxima were *c.* 120 on September 20th, 360 on October 22nd, and *c.* 440 on November 6th, all dates on which various species of ducks were passing south in numbers. An adult male was at Denaby Ings on June 13th (J.B.H. *et al.*). Also recorded at Redcar (north-west movement between October 1st and November 12th (D.R.S.)), and on 11 other inland waters.

52. Pintail (325).—During the first three months of the year the largest counts for this species in the county were made on the Lower Derwent Floods, with *c.* 40 on January 1st, 33 on January 15th, *c.* 140 on February 12th, *c.* 115 on March 5th, dropping to 13 on March 19th (M.R.S., A.F.G.W.). High counts were also made at Cherry Cobb with *c.* 20 on March 19th (B.S.P., A.M.G.) and 42 on October 30th and November 18th (G.R.B.). The spring maximum at Hornsea was 11 on January 15th, and in the autumn 14 on November 18th (G.R.B.). Nowhere else did numbers approach these although this species was seen in 19 other localities. Three females or immatures at Gouthwaite on July 5th to 9th were unusual (A.F.G.W.), as was a single bird on a small pond at Bampton on June 22nd and 24th (J.F.).

53. Shoveler (326).—No appreciable change in status except that numbers at Hornsea were higher than normal. The spring peak was 59 on March 26th, numbers rising in August to 97 on August 19th, 122 on August 28th, 70 on September 3rd, 159 on September 9th, and 170 on September 10th, thereafter fluctuating between *c.* 15 and 60 to the year end (G.R.B.). Bred in several places and numbers reached double figures in eight localities, mainly in the autumn. Seven flew north-west at Redcar on August 19th (D.R.S.) and 33 passed Filey Brigg on September 17th (R.H.A.).

54. Red-crested Pochard (327).—An adult male at Hornsea Mere from April 22nd to June 11th, and a female from May 25th to June 3rd (G.R.B., A.D.B., B.R. *et al.*), and a female on September 3rd (G.R.B.). Single birds on Nostell Dam on October 12th and 14th (R.N.R.) and on Walton Hall lake on October 22nd (J.S.A.). A female at Fairburn on June 11th (C.W.).

55. Scaup (331).—Very few coastal records. At Spurn 91 were on the Humber-side on January 28th, 92 the next day, with 24 flying north and 31 south over the sea. The next largest number was *c.* 20 on December 26th. Only other coastal

records are 14 and 24 at Flamborough on November 12th and December 26th (G.R.B.), and one at Filey Brigg on September 20th (R.H.A.), six at South Gare on October 28th (D.G.B.). Varying numbers visited Hornsea Mere with maxima of 17 on July 23rd, 23 on August 19th, and 22 on September 30th (G.R.B.). Further inland odd birds turned up, mainly in the autumn, on 13 other waters and mainly seen on single occasions. Examples include a female at Marfield, near Masham, on March 27th (E.E.J.), one on East Park lake, Hull, on January 28th (B.S.P.), with five females at Midhope Reservoir on November 19th (A.C.) and 11 on Stocks Reservoir on December 31st (J.K. & A.E.F.) as maxima. A female stayed on Worsborough Reservoir from September 17th to October 22nd (D.J.S. *et al.*).

56. Tufted Duck (330).—At Hornsea Mere numbers fluctuated quickly and considerably, with a spring peak of *c.* 300 on March 26th, *c.* 600 on October 21st, and 728 on December 16th (G.R.B.). In the Dearne Valley a build-up was noticed in March with maxima at Worsborough Reservoir of 57 on March 13th, and 78 at Nostell Dam on March 19th (T.M.C., C.B.). Numbers in general were normal.

57. Pochard (328).—Maximum numbers exceeded 1960's counts on several waters. Hornsea Mere had 958 on November 4th, increasing to 1,390 by November 11th (G.R.B.). At Worsborough Reservoir counts were much higher than a year ago with 160 on February 2nd (A.A.), and up to 183 on December 2nd (C.B., A.A.). Southfield Reservoir had 270 on November 23rd (E.W.E.). Parties of *c.* 150 on November 21st (W.B.S.) and *c.* 170 on December 3rd (B.S.P.) at Welton Water were high. Numbers on the Lower Derwent Floods in February were high—*c.* 840 on February 12th (H.O.B.).

58. Goldeneye (332).—Maximum numbers exceeded 1960's counts, and the species turned up more frequently on many waters. Hornsea Mere had a spring peak period when 302, 283 and 295 were counted on March 26th, April 9th and April 14th respectively, but the autumn maxima were lower with 197 on November 11th, and 172 on December 10th (G.R.B.). Counts on the Lower Derwent floods in spring showed *c.* 60 on January 1st, *c.* 110 on January 15th, 68 on February 5th, *c.* 120 on February 12th, *c.* 85 on February 24th, dropping to 11 on March 5th (M.R.S., A.F.G.W.). Smaller numbers occurred on many other waters in both spring and autumn, including unusual localities such as Leighton Reservoir where ten were seen on November 6th (P.Y.). One stayed on Scaling Dam from June 20th and throughout July (D.G.B. *et al.*). North-west movement was recorded at Redcar on October 17th (seven), October 19th (two), October 20th (six), November 5th 63 in 65 mins.), and November 12th (two), (D.R.S.).

61. Long-tailed Duck (334).—At Redcar single birds on January 14th and December 1st (D.R.S.). An immature stayed on Lockwood Beck Reservoir for three days from November 8th to 11th (D.G.B. *et al.*). Six passed south off Flamborough on November 26th, and at Hornsea Mere one was present from January 1st to March 31st, and one or two on several dates in November and December (G.R.B. *et al.*). At Spurn single birds on several dates from September 5th to December 26th, with two on November 3rd to 4th. A dead bird was found on the Point dunes on October 28th. Two females at Swinsty Reservoir on February 12th (O.M.P., W.F.F., H.J.W.); an adult male at Eccup July 2nd to 9th, and one on October 18th.

62. Velvet Scoter (340).—Always present until April 1st at Redcar, six or seven seen after, with a maximum of eight on March 9th, but in the autumn none seen which is unusual (D.R.S.). One first seen on September 24th, stayed on Scaling Dam up to December 24th (D.G.B. *et al.*). Small numbers seen on 11 dates in the autumn between Filey and Hornsea, with 12 off Hornsea on October 16th (G.R.B.) and eight at Filey Brigg on October 21st (R.H.A.) as maxima. At Spurn up to six from February 10th to February 13th, and three occurrences in April. In autumn a few recorded, usually on days when Common Scoters were in some numbers. One stranded on the Humber mud on November 19th.

63. Surf Scoter (341).—On August 30th G. R. Naylor and M. Densley had good views of a bird at Spurn. It was also seen by several other observers and was satisfactorily described in the day's log. This is a new species for the Yorkshire records.

64. Common Scoter (339).—At Redcar up to 60 present until April 7th, then absent until July 16th (30), then frequently in small numbers but occasionally large flocks with 350 on November 19th as maximum (D.R.S.). Occurred in every month at Spurn with maxima of 180 on April 14th, *c.* 150 on July 29th, *c.* 80 on August 30th, *c.* 100 on September 18th to 19th, and *c.* 250 on November 19th. At Hull a party of

eight on May 6th and *c.* 75 on August 19th flew west up the Humber (B.S.P.), and *c.* 100 followed the same flight line at Broomfleet Island on August 20th (H.O.B.). Inland occurred at Blackmoorfoot Reservoir (max. seven on August 2nd) (D.M., J.S.); Worsborough Reservoir, five on July 26th (A.A.); Fly Flatts Reservoir, seven on August 20th (J.C.P.); Southfield Reservoir, 6 + on October 19th (E.W.E.) and Leighton Reservoir, 22 on August 27th (E.E.J.); and at Fairburn, Eccup and Gouthwaite where larger numbers were recorded.

67. Eider Duck (337).—Numbers recorded not so numerous as in recent years. Records from coastal areas only, with usually fewer than six birds, most frequent November and December. Twenty-two on November 25th at Filey Brigg was the highest record.

69. Red-breasted Merganser (343).—Seen in ones or twos along the coast on 21 dates in spring and on 19 dates in autumn, with six at Filey Brigg on October 7th (R.H.A.) the maximum. Inland one on Worsborough Reservoir on April 30th (D.J.S., G.R.A.) and two (one female) on Ingbirchworth Reservoir on October 15th (J.E.D.). Three pairs bred at one locality (A.P.). A pair at Gouthwaite on November 19th, and one at Fairburn on October 22nd.

70. Goosander (342).—Fewer records. Hornsea Mere spring peak was 147 on March 5th, and the last, a single bird, on March 26th; the first of autumn being five on October 21st, numbers building up slowly to 82 on December 23rd (G.R.B.). On Lockwood Beck up to seven (including two males) were present from end of January to March 12th, with a pair on April 3rd (M.A. *et al.*). One on February 18th, three on February 26th, and four on April 6th were all confirmed at Spurn. A female at Blaxton on November 26th, and December 3rd (A.E.P., J.B.). Several on Scaling Dam on January 1st (J.L.). Smaller numbers than usual on inland waters. Eccup had spring peak of 39 on March 19th, and 39 on December 23rd was a sudden influx after 13 on December 22nd. Peaks at Stocks Reservoir were 56 on March 29th and 47 on December 31st. Elsewhere largest number was 17 at Coniston Cold on February 5th (E.G.).

71. Smew (344).—Hornsea Mere had two 'redheads' on January 1st and 15th (G.R.B.), and four on December 30th (R.H.A.). A single bird seen on Lower Derwent floods on January 15th and three days in February (M.R.S., A.F.G.W., D.G.B.). A 'redhead' on Walton Hall lake on November 21st (R.T.P.). A male on Hury Reservoir, Baldersdale, on February 19th (R.W.R.). At Harewood an adult male and five 'redheads' on February 5th and 12th (G.R.N., D.A.S.); an adult male and three 'redheads' on March 5th (G.R.N.). Stocks Reservoir, one on January 15th (J.K. & A.E.F.); Malham Tarn, one on February 25th to 26th (E.G., D.A.S.); Fairburn, an adult male on January 1st; Gouthwaite, two on November 19th (P.J.C., A.F.G.W.), which probably moved to Sawley Fish ponds on November 21st (J.B.).

73. Sheld-duck (315).—The Tees estuary again recorded the highest number with 1,100 present on January 30th (P.J.S.). Smaller numbers occurred south along the coast from January to April and again between late July and end of October. At Spurn occurred on most days with spring maximum of *c.* 140 on February 25th and 27th, and after the breeding season maxima of 108 on July 24th and *c.* 100 on July 29th. Mostly numbers were smaller, especially from March to July, and on many days from September 11th to the year end the species was unnoticed. During the breeding season fewer were recorded than usual. In the Lower Humber region on three dates in March up to *c.* 190 occurred, 109 on July 16th and smaller numbers during August (H.O.B. *et al.*). For the Upper Humber *c.* 200, *c.* 60 and *c.* 250 were counted on February 3rd, March 31st and April 3rd respectively, with July and August counts not quite so high (H.O.B. *et al.*). There were still *c.* 150 at Broomfleet Island on December 2nd (T.B.R.). Ones and twos occurred on ten waters in V.C. 63 with seven at Blackmoorfoot Reservoir on April 30th (A.N.S.) as maximum, and at Eccup, Fairburn and Gouthwaite, with maxima seven at Fairburn on April 8th and six at Gouthwaite on November 20th.

75. Grey Lag Goose (303).—A single bird, presumably pricked, spent the day around the Spurn Warren on March 4th, and one continued to be seen until April 1st. Otherwise records of this species consist of up to three on five days in October and November. Two stayed on Hornsea Mere from April 16th to May 28th (three from April 22nd to 30th), and 11 and five were seen there on December 10th and 17th (G.R.B., B.R. *et al.*). Five were at Faxfleet on October 22nd (A.G.), and 98 flew east over Ossett on December 25th (A.F., R.T.P.). Three visited Scaling Dam on November 4th, and six on November 11th (D.G.B.). One at Ripley from April 29th

to May 5th, and possibly same bird seen at Gouthwaite on May 10th stayed until year end (M.R.S., A.F.G.W.). Forty-six flew south-west near Luddendenfoot on January 10th (K.H.).

76. White-fronted Goose (304).—A party of 18 (six definite adults) were seen near Patrington on January 1st (A.C.). One stayed at Ripley from January 5th to March 19th (M.R.S., A.F.G.W. *et al.*). One flew west at Ilkley on February 23rd (R.C.P.). At Spurn one on March 1st, four on November 25th, with the call heard on December 10th, were all the records.

78. Pink-footed Goose (307).—In the Humber Refuge up to *c.* 300 were present up to March 5th, when observation ceased (J.E.R.). The first of autumn were 63 on September 27th, after which numbers were similar to previous years, reaching a peak of *c.* 5,160 on November 3rd. It now seems likely that figures given by the Warden for the autumn of 1958, 1959 and 1960 were exaggerated. Elsewhere records show fewer skeins on the move at both ends of the year. Larger skeins include flocks of 70 and 14 at Redcar on October 14th (D.R.S.); 63 at Filey Brigg on October 14th (R.H.A.); 124 off Hornsea on October 28th, with 44 the following day (G.R.B.); 46 flying east-north-east over Ossett on October 29th (J.C.); *c.* 120 north-west over Pitsmoor, Sheffield, on November 4th (R.G.H.); 33 going north over Armthorpe on December 24th (J.G.). At Ripley, two were present on January 7th and February 12th, then one to March 12th and from April 14th to May 5th (W.C.W. *et al.*). At Eccup, one on November 5th, five on December 10th and three on December 24th. An influx occurred from October 11th to 14th at Teesmouth where at least 700 were seen. On December 29th 13 alighted for a few minutes on a completely frozen Scaling Dam (D.G.B.).

Numbers of records named simply as 'Grey Geese' do not indicate any movements which are outside the normal pattern.

79. Snow Goose (308).—An unringed adult white phase bird joined the two Canada Geese on Lockwood Beck Reservoir on June 12th. By June 27th it had moulted all its black primaries (which were collected), but new ones quickly grew and the bird stayed about Lockwood Beck and Scaling Dam throughout the remainder of the year (D.G.B.). What was presumably this bird, with two Canada Geese, flew past North Gare at Teesmouth on December 27th (P.H., R.J.L.).

80. Brent Goose (312/13).—Seventeen in the Tees Estuary on January 29th included both races (E.G., P.J.S.). At Filey two were seen on March 11th (R.H.A.), and two on March 18th (B.R.); one at Flamborough on November 19th (G.R.B.); one, Bridlington on October 18th (B.A.); two off Hornsea on October 29th and two on Hornsea Mere on December 9th (G.R.B.); two at Patrington Haven on April 2nd (L.S.). At Spurn up to ten occurred from January 29th to February 26th included both races. Two on April 27th were dark-breasted as was one on October 22nd, and one came from east to the Humberside on December 16th.

81. Barnacle Goose (311).—Two were seen at Ogden Reservoir on April 15th, the only inland records (C.W.). At Spurn three birds in the Beacon area from April 21st to 24th; four came in off the sea on October 19th, stayed for an hour and flew off up the Humber; two alighted near the Chalk Bank on November 15th. Six flew north-west at Redcar on October 17th (D.R.S.); and a 'tame' bird stayed by a small pond at Flamborough from November 19th to December 3rd (G.R.B.).

82. Canada Goose (314).—Nests were raided at Bretton Park on April 24th, and only four young were produced (J.C.S.E.). Some control over numbers was exercised elsewhere. The stability of the species at its well-known headquarters is rather remarkable. Maximum counts were: Wentworth Park, 139 on January 15th (T.M.C.); Harewood, 185 on June 7th; Gouthwaite, 150 on July 16th; Leighton, 370 on September 17th and 26th (E.E.J., C.D.M.); Bretton Park, 140 on October 8th; Ripley, 265 on October 15th; Nostell Dam, 67 on November 9th (Ackworth N.H.S.); Fewston Reservoir, 134 on December 17th. Interesting extensions were: two on Hornsea Mere on April 9th (G.R.B.); four by Broomfleet Island on September 8th (T.B.R.); and four on the sea off Spurn on April 4th.

84. Mute Swan (302).—At Fairburn the monthly maxima were: January 63, February 30, March 21, April 20, May 64, June 116, July 146, August 167, September 38, October 34, November 10, December 18. Numbers at Hornsea show the same pattern. There *c.* ten were present up to April 9th, with a slow increase to a maximum of 118 on July 9th, dropping again to *c.* ten by September 30th, staying constant until December 3rd, with only three on December 10th (G.R.B.). Welton Water had a peak of 34 on July 1st, otherwise one to ten (B.S.P. *et al.*). Maximum at

Broomhill Flash occurred in November and December with 36 present (43 on December 3rd) (C.B., A.A.). Only recorded at Spurn on five days in January, April, May and August.

85. Whooper Swan (300).—More numerous than in 1960 and records have been received from no less than 40 localities. Again most flocks only stayed for short periods in any one place, though 14 were on Broomhill Flash on October 21st (A.A., D.J.S.), with 14 also recorded on December 17th (G.R.A.), although the number varied in between these dates to a maximum of 41 (25 adults) November 12th (C.B.). Six lived on Hornsea Mere from November 4th into December, ten other birds flying over on December 17th without stopping to join the resident six (B.S.R. *et al.*). Fairburn had autumn maxima of 11 on November 24th; 20 on December 10th; 24 on December 26th; the largest flock of the year being 32 which flew over on March 4th and like the Hornsea flock did not stop to join the resident eight birds. Between January 1st and March 5th numbers fluctuated on the Lower Derwent floods, with a peak of 35 on February 12th (M.R.S., A.F.G.W.). Up to 35 were present on Tarn House Reservoir, Sedbergh, from November 2nd to December 20th, more than ever before (Sedbergh S.S.). At Harlington Flash 51 flew north at 12.55 hrs. on December 17th (J.B.H. *et al.*). Eleven flew low over the Humberside at Spurn at 08.40 hrs. on February 27th, and four adults frequented the mud during the morning of October 19th. Nine came down into the South Bay at Scarborough on December 17th (M.H.N.). At Stocks Reservoir 21 on December 31st (J.K. & A.E.F.).

86. Bewick's Swan (301).—Unlike 1960 the species was more numerous in the late months, except that on the Lower Derwent floods numbers were high from late January to late February, reaching a peak of *c.* 200, the largest recorded in Yorkshire, on February 20th. Smaller numbers occurred at 19 other localities, including 12 at Ingbirchworth Reservoir on December 23rd to 24th (A.N.S. *et al.*); 38 passed over Hornsea Mere on December 17th (G.R.B.); 30 (probably of this species) flying west over Wakefield on December 17th (J.A.B.); five at Fairburn by November 16th where a single bird stayed from February 19th to March 19th; nine (two juvs.) at Gouthwaite on November 20th; eight at Sawley on February 12th and 15th (M.R.S. *et al.*).

91. Buzzard (269).—Nine pairs located in the north-west, seven nests found, and 17 young ringed (Sedbergh S.S.). Recorded from eighteen other localities, mostly outside the breeding season, without definite specific identification, and spread over most months of the year.

92. Rough-legged Buzzard (268).—One, flushed from a rough bushy area of the Castle Hill, Scarborough, on February 11th, had underside light around throat, heavy wash of brown across lower abdomen, broad white area about base of tail and light carpal patches (T.M.C.). One near Treeton on January 23rd (D.B.C.).

93. Sparrow-Hawk (277).—'Continues to disappear at an alarming rate' is the comment of one recorder, and the following, though possibly not a complete coverage, constitute every record received in 1961. At Spurn from March 29th to May 7th up to three occurred on 15 days. In autumn the species was only noted on five dates. One at Hornsea Mere was seen on several dates from May to December, with two on December 2nd (G.R.B.). Records of single birds covering every month except August come from Filey Brigg; Worsborough Reservoir (twice); Hemsworth; near Meltham; Rockley (twice); Bretton Park (thrice); Langsett; Walton Hall; Haw Park; Kildale Woods (two); Fairburn (twice); Ilkley; and Leighton Reservoir. At Eccup recorded on 12 dates, eight between January and April, two isolated June records and twice in October. On December 20th one attacked a Redwing in a mist net at Sedbergh, but escaped itself (Sedbergh S.S.). Nested successfully near Beverley (A.J.J.) and near Sheffield (R.G.H.). A pair at Stanghow were watched in aerial display (M.A.).

99. Marsh Harrier (271).—One record only—a single cream-crowned bird at Swine on September 15th (G.R.B.).

100. Hen Harrier (273).—At Spurn single birds were recorded on April 21st, April 29th, May 20th, and none in the autumn. One on Ilton Moor on January 20th (P.Y.); one at Liverton on January 15th (M.A.), one near Stanghow on March 15th (M.A.); and single birds recorded in January, March and May in V.C. 64. One near Wroot on January 9th (A.E.P., J.B.) (see 1960).

102. Montagu's Harrier 272).—Two at Spurn on May 7th.

100-102. Harrier Spp. Harriers not specifically identified were recorded at Spurn; one on May 2nd described as 'almost certainly Montagu's'; a ring tail on

August 16th was described as large with a light patch at base of tail, but the date was early for Hen Harrier at Spurn; one at Patrington Haven on November 25th (A.A. *et al.*). One at Deerhill on August 24th was probably Montagu's (R.Cr.).

103. Osprey (284).—Three records. A bird which stayed at Lilymere, near Sedbergh, from April 27th to May 1st is recorded as having taken ducklings from a nearby house (Sedbergh S.S.). One at Blaxton on June 3rd and 4th (A.E.P., J.B.). One flew south over Woodhouse Mill, Sheffield, on October 8th (R.G.H., D.B.C.).

104. Hobby (261).—One stooped at larks and sparrows by a the fox covert at Redcar on September 24th (D.R.S.).

105. Peregrine Falcon (259).—Reported from several areas on various dates in the north-west. Elsewhere single birds at Sunk Island on January 8th and December 23rd (A.C.); one flying low over a steelworks yard at Tinsley, Sheffield, on December 11th (R.G.H.); and at Spurn one flew south on April 3rd, and one frequented the lagoons in the evening on August 13th and the following morning, believed to be an immature male.

107. Merlin (262).—One was seen on Ilton Moor on January 9th, an early date; one calling over a nesting site on February 15th, and one being chased by a curlew on April 25th (P.Y.). Recorded from at least seven other moorland localities, at least one pair breeding successfully. Occurred at Fairburn in January, November and December (maximum of two) and at Eccup in January, March, August and October. Birds of passage were recorded at Stone Creek on March 19th (A.C., B.S.P.); Hornsea Mere, September 16th and October 21st (G.R.B.); Redcar, September 16th (D.R.S.); Castle Hill, Scarborough, February 11th (T.M.C.); White Holme Reservoir, August 17th (V.S.C., I.M.); Golden Acre Park on November 1st (G.R.N.); and at Spurn where single birds occurred on March 4th, April 16th, May 20th, July 26th, August 23rd, and on ten days from September 17th to October 14th.

108. Red-footed Falcon (265).—P. J. Mountford had good views of one that passed low above him on the verge of the Spurn Point dunes on June 21st, and recorded an excellent description of the bird, which was accepted by the Rarities Committee of *British Birds*.

110. Kestrel (263).—The conflicting reports concerning this species mentioned in 1960 seem to be confirmed again by the records for this year, some recorders referring to decreases while others state quite the opposite. A. D. Wright writes: 'I have notes on one or more birds seen during 1961 in ten different areas around Halifax and they are certainly not decreasing.' On the other hand the species was very scarce in all months at Fairburn and at Eccup was only recorded regularly in March and April and from the second half of July to October. Records for VC. 63 can be summarised by the following table:

Month	No. of Birds	Different Localities
January	6	5
February	3	2
March	3	2
April	5	4
May	4	4
June	6	6
July	6	4
August	5	4
September	26	17
October	16	13
November	5	4
December	1	1

The species was very common in the Garsdale area, where one family had remains of many moles about the nesting hole in a barn wall (Sedbergh S.S.). A spring count in the Sedbergh area 17 nests were found and five more suspected and 38 young are known to have been reared. After the nesting season there was 30-34 adults and 34+ juveniles in an area of 36 square miles, and a count on October 8th showed 32 birds still present (Sedbergh S.S.). Passage was very noticeable at Spurn on many days from late July into August: few in late September to October 8th; then numerous until October 12th, with 16 seen on October 11th, maximum on a day for the year. Elsewhere only single or pairs of birds were seen coming in from the sea, for example, Filey Brigg, one on July 30th (R.H.A.); Hornsea, one on August 7th (G.R.B.); Flamborough, one on September 10th (H.O.B.); Bridlington, one on October 14th (B.A.); Redcar, one on September 20th; two on September 24th; one on October

14th; two on October 22nd (D.R.S.). That some of this passage passed inland would be confirmed by the high figures in the table above for September, and in the Scarborough district there was a very marked increase in the species during September and October (A.J.W.).

111. Red Grouse (514).—On June 12th a pair on Ilton Moor was seen with a brood of 13 young, a large number (P.Y.).

113. Black Grouse (513).—Records from at least seven localities, including one of 12 males at one lek in May. Elsewhere numbers were smaller, and a grey hen near Masham on December 28th (P.Y.) had possibly been driven from its native grounds by the cold spell.

116. Common Partridge (518).—At Spurn was identified more frequently than Red-legged and bred more successfully. That 24 were ringed against one of the other species is significant. Four very small chicks seen near Farnley Tyas on July 20th were a late brood (A.N.S.).

115. Red-legged Partridge (519).—Ten was the largest number recorded at Spurn. Records received from only 12 other localities, but the species undoubtedly occurred in many other parts of the East Riding and South Yorkshire.

117. Quail (520).—One heard calling near Barmston on June 15th (A.D.B.). Present at Muston, near Filey, throughout the season and probably nested (J.T.). One was picked up in a dying condition near Brighouse in November, was seen by E.C.J.S. and C.J.D. and is preserved in Ravensknowle Museum, Huddersfield. A pair, with six young, seen near Fountains Abbey on June 30th (H.H., G.F.).

120. Water Rail (509).—Recorded in all months at Fairburn with eight on October 28th, the maximum. Single birds, though up to three in November, seen during most of the year, including end of June and during July, at Rockley and Worsborough Reservoir (D.J.S., A.A., C.B.). At Hornsea Mere maximum counts were 13 on July 23rd and 14 on December 9th (G.R.B.). A large number of records, from the Doncaster area (mainly in November), during the last quarter, with single birds seen on 14 dates from seven localities. At Spurn one spring record on April 9th; then in the lagoons area on August 15th, September 25th, October 1st, and on many days in several areas from October 18th to the year end, sometimes two or three in a day. Records of single birds also received from 14 other localities, including one on Scaling Dam, the first for that water (D.G.B.).

121. Spotted Crane (505).—One found dead on the road at Branton, near Doncaster on December 2nd (R.M., D.W.).

125. Corncrake (504).—Occurred at Spurn: one on May 7th, two in lagoons area on August 15th, and one in Warren fields on September 1st and 2nd. One at Baysdale Abbey on May 3rd (A.E.F.). One near Barnard Castle on May 23rd (D.R.S.). One calling during second half of May near Woodsome, Huddersfield (M.S. *et al.*). Heard calling once 'in spring' near Glasshouses (per A.S.). One present at Wortley, near Sheffield, from June 26th to July 4th (J.I.M.). Heard near Warton, Wensleydale, in June (G.E.A.). Single birds at Hornsea on August 26th and September 3rd (G.R.B.). A bird was caught and ringed in a kale field at Bewerley on November 10th (A.S.), and there were one or two other reported occurrences.

127. Coot (511).—Counts at Fairburn varied between *c.* 600 on January 1st, on June 25th and during July, and 300 on February 4th and 26th; at Hornsea Mere from *c.* 340 on January 1st to *c.* 60 in late May and *c.* 600 from August onwards (G.R.B.). Scaling Dam recorded largish numbers for the first time, reaching 155 by December 24th, but some other usual haunts had very few. A newly hatched chick on April 14th at Staveley G.P. was early (A.F.G.W.). Movements of coots about which we are ignorant was exemplified at Masham where numbers increased to *c.* 50 by April 2nd (E.E.J.), at Bretton Park where numbers rose after breeding season to *c.* 120, and elsewhere. Numbers on the Derwent floods rose to 350 on January 15th and had dropped to *c.* 20 by March 19th (M.R.S., A.F.G.W.), showing the effects of dispersal—where? Holland?

131. Oystercatcher (452).—Bred in the western dales, at Spurn and Sunk Island (H.O.B.). Occurred fairly frequently in Nidderdale and by such waters as Fairburn, Eccup, Cold Edge Dam, Blackmoorfoot and the Dales rivers. Eight crossed the Dearne Valley westwards on October 3rd, which could have a connection with one at Redmires Reservoir on November 18th and with the Humber parties at Faxfleet that flew west during August. They could have passed up the valleys of the Don (and Dearne), or the Ouse, or even the Trent. Up to *c.* 97 were recorded during early months at Spurn, and up to 70 during the August passage.

133. Lapwing (449).—About 2,000 which flew south-east over Hornsea on January 8th (B.S.P.), if they maintained direction could have left the country. For long afterwards large numbers remained about the Lower Derwent floods (c. 4,000 on February 12th, c. 5,000 on February 20th (A.F.G.W.)). On February 11th c. 780 passed south-east at Spurn. To separate immigrant parties from the build-up of local breeding birds is usually difficult; and to which category Lapwings at Fairburn belonged, c. 1,800 of which 110 flew west on February 18th would be uncertain. About 300 at Gouthwaite on March 4th would be likely to be local breeders prior to the spread over the uplands. When local birds have taken up territories (and some even have eggs) one is on safer ground concerning those still in flocks.

Chicks on April 23rd at Middlesmoor had evidently survived the snowstorm of April 4th, as did other early nests, but certainly not all. The open early spring had produced more early nests than usual. Late April brought a prolonged wet spell with sad ends for many young Lapwings. An assembly of 50 adults at Ripley as early as May 18th might have reflected breeding failure. A successful breeding season was reported at Doncaster (R.J.R.).

Autumnal coastal passage was normal, reaching a peak at Redcar on October 21st (D.R.S.); on October 22nd at Atwick when c. 1,580 passed south; and on October 23rd at Spurn with 3,591 counted in 2 hrs. 50 min. and a day's estimate of c. 5,000.

Weather movements noted in many areas are exemplified by the following: December 24th, c. 1,200 passed west over Worsborough Reservoir (A.A., D.J.S.); c. 250 flew west at Knaresborough S.F. (J.R.M.); c. 650 flew south-west at Eccup and flocks moved up the Aire Valley. On December 25th, 1,150 moved south-west over Gouthwaite. On December 28th flocks flew west all day over Colsterdale Moors (P.Y.). Heavy snow followed. On December 29th the species had vanished from the Blaxton area (A.E.P., J.B.).

134. Ringed Plover (435).—About 75 on the Welton foreshore on January 9th (D.J.B.) was an unusually large count for the Upper Humber in winter. In Lower Humber the species was usually scarce or absent.

About 200 on Cherry Cob Sands on May 2nd (H.O.B.), and c. 300 there on August 18th and 26th were normal peaks. Spurn had c. 140 on August 15th and 22 occurred at Winterset Reservoir on August 13th (C.E.A.). Autumn passage at Welton was very low (B.S.P.). Occurred in at least 15 other usual localities. Bred at Spurn in decreasing numbers, and an attempt to breed in the west was spoiled by floods.

135. Little Ringed Plover (438).—Bred in five localities, and attempted in a sixth, probably unsuccessfully. The first seen in a nesting area occurred on April 8th. Outside the breeding localities the species was recorded at Gouthwaite, one on July 13th (A.F.G.W.); Barmston, one on June 7th (A.D.B.); Hornsea Mere, one on August 7th (G.R.B.).

139. Grey Plover (444).—Usually present at Spurn except in June to August, and odd birds even then on some days. Estimates of up to c. 40 were not infrequent from August, with c. 100 on August 27th, and September 23rd. Inland occurred at Fairburn, single birds on May 14th, June 5th, August 1st; Winterset, one on September 21st (C.B.); two on October 21st (J.S.A.); Hemsworth, three on October 21st (M.N.R.) and Haw Park, one on October 22nd (J.S.A.).

140. Golden Plover (440).—Counts appear to have been larger than usual in both spring and autumn, and include c. 500 at Harrogate on January 29th (M.R.S.); c. 380 near Haverah Park on February 27th (C.W.); c. 230 at Edderthorpe on March 4th (T.M.S.); c. 350 on Eccup Moor on March 12th (G.R.N.); very large numbers over Lower Derwent Water meadows on March 19th (H.O.B.); c. 1,000 at Hangthwaite on April 2nd ('the largest flock seen there') (R.J.R.); c. 450 at Menwith on April 3rd (W.C.W.); 300-400 at Redcar for early months of the year (D.R.S.). Birds were present above Askrigg nearly all February (P.Y.), and a pair had returned to 1,200 ft. contour on Middlesmoor by February 19th, and pairs were numerous up to 1,500 ft. contour by March 5th (D.S.). There was a general failure of chicks in the area in May (D.S.). In the autumn counts included c. 360 at Haverah Park on November 8th; 500 at Wadworth Carr on November 4th (R.J.R.); c. 550 at Gargrave on November 12th (D.A.S.) and c. 1,000 near Almscliffe on November 20th (H.L.S.). Between 12 and 15 birds wintered on Baugh Fell, Sedbergh—either this is the first time or they have not previously been recorded (Sedbergh S.S.). The position at Spurn was normal.

143. Turnstone (402).—Numbers were normal along the coast. Occurred inland—at Fairburn, single birds on April 29th, May 22nd, June 4th, July 19th and 28th; at Blaxton, two on June 10th (A.E.P., J.B.); Bowes Moor, one on May 14th (P.J.S.); Chelker Reservoir, one on August 1st (W.F.F.); Blackmoorfoot Reservoir, two on August 2nd (D.M., L.T.); single birds at Whiteholme Reservoir on August 10th (V.S.C., I.M.); Winterset Reservoir on August 17th (A.F.); Fly Flatts Reservoir on October 5th (D.A.S.).

145. Common Snipe (395).—One was drumming on Masham Moors on February 17th (J. Rough per P.Y.), and first birds on Middlesmoor were noted on February 26th, with drumming and chipping on March 5th (D.S.). Maximum counts include *c.* 100 at Almholme on March 25th (R.J.R.); at Fairburn, 180+ on February 18th, 150 on February 19th, 200+ on September 24th and *c.* 130 on October 13th; 60+ at Harlington Flash on October 8th (J.B.H., C.I.B.); *c.* 200 at Potteric Carr on October 8th and 28th, with *c.* 250 on November 4th (H.E.S.). About 70 was maximum at Gouthwaite on June 29th, and 17 at Scaling Dam on September 1st was a sudden increase (D.G.B.). At Spurn the species was not noted from April 30th to July 25th except for one bird on June 25th. Maximum of autumn: *c.* 20 on September 27th and *c.* ten on September 20th, 21st and 28th, October 4th and November 5th and 19th.

147. Jack Snipe (398).—Records and numbers were more numerous than a year ago. In spring wisps of up to five birds recorded from 18 localities with four at Horbury S.F. on February 18th (A.F.) and five at Fairburn on April 3rd and 8th as maximum, and two at Sprotborough Flash on April 16th (W.G.D., R.J.R.); as the last. At Spurn odd birds occurred on six days to March 31st, and on six days to April 25th. No more until one on September 25th; then one or two on 18 days to the year end, including maxima of six on September 27th, and seven on October 1st. The first of autumn was one on Scaling Dam on August 27th, the main influx coming in October and November with records received from up to 14 localities. Occurrences at Broomhill, nine on October 21st and eight on October 28th (D.J.S., A.A.) and four on November 5th (A.A.); at Adwick-le-Street S.F., four on October 29th (R.J.R.); at Armthorpe S.F., seven on December 23rd (T.G., P.G.), exceeded average numbers. At Aughton Ings 23 were flushed on November 16th (G.R.B.).

148. Woodcock (393).—A bird was roding near Almholme on March 2nd (W.G.D.), and two at Gouthwaite on March 4th (A.F.G.W.). One was seen above Outlane, Huddersfield (*c.* 1,000 ft.) on February 19th (R.Cr.), and two were in Haw Park on March 7th (R.T.P.). The main influx of autumn was on or about November 5th, on which date one was in a fox covert at Redcar (D.R.S.), ten were noted at Spurn, and single birds at Atwick, Cottingham, Hull (one in the city centre), Welton, and three came off the sea at South Gare (D.G.B.). One was at Flamborough on November 19th (G.R.B.), and one flushed near Ilton the following day seemed tired, as though it had just come in (P.Y.). Near Masham on December 28th in about one and a half miles of bracken bank 25-30 were flushed—more than the local population (P.Y.).

150. Curlew (388).—Spring maxima at Spurn were *c.* 750 on February 14th when *c.* 700 flew south from the Point across the Humber mouth, and *c.* 200 on February 28th and March 2nd. Gouthwaite wintering flock reached *c.* 180 on February 4th before any birds had taken up territory. The spring call heard on Ilton Moor by February 1st (P.Y.). A survey in the Doncaster area showed a breeding distribution within ten miles of at least 20 pairs (details are being published independently). A flock of *c.* 1,000 was on Austwick Moss on July 4th (A.P.).

Autumn maxima at Spurn were not as high as in spring with *c.* 130 on August 25th and September 1st, and *c.* 100 on October 2nd and 3rd. At Gouthwaite the autumn-winter flock was *c.* 85 strong by September 19th, 148 on October 14th, *c.* 255 roosting in March on November 5th, *c.* 295 on November 26th, and only ten on December 31st during freeze-up (A.F.G.W.), occurred almost daily at Fairburn during July to September with maximum of 21 on August 19th, all flying west.

That birds are staying inland more frequently compares with the records for Golden Plover. On Ilton Moor and about the reservoir 12 were still present on October 30th, two on November 20th, five on December 5th, ten on December 14th, 12 on December 17th (P.Y.).

Was there a link between a bird on marshy ground near Wakefield on December 17th (J.A.B.) and several heard calling over Pitsmoor, Sheffield at 18.10 hrs. (R.G.H.)?

151. Whimbrel (389).—The main passages of both spring and autumn came as usual, concentrated along the coast. The first were three at Atwick on April 9th (G.R.B.), an early date, and reached maxima of 40 at Spurn on May 2nd, and *c.* 25 at Patrington Haven on May 4th (H.O.B.). An early bird arrived at Spurn on June 30th, and from July 10th daily until late September, the heaviest passage being from August 4th to 8th (45 on August 7th); at Filey Brigg the highest total of 72 passed south also on August 7th (R.H.A.). A late flock was 15 at Cherry Cobb Sands on September 23rd (H.O.B.); and late birds occurred at Atwick on October 22nd, two at Cherry Cobb Sands on November 20th, and two at Hornsea on December 10th (G.R.B.). Inland only ones or twos recorded except five at Knaresborough S.F. on August 4th (J.R.M.) and six at Broomhill on August 5th (D.J.S.).

154. Black-tailed Godwit (387).—Spring records were few but most unusual numbers were recorded in autumn. Single birds appeared at Spurn on March 31st (J.C., N.R.G.), and May 2nd (C.W.F.H.); and at Fairburn on April 9th, 22nd and 23rd.

Post-breeding birds began to appear as early as June 18th when nine in breeding plumage flew in from west to Fairburn and departed south-east. Singles were noted at Gouthwaite on many dates from July 8th to September 9th (A.F.G.W. *et al.*). At Teesmouth, one on August 4th (G.T.) was followed by a party of 35 that flew across Seal Sands and past South Gare on August 7th (A.V., W.A.). On September 17th one was at Scaling Dam (D.R.S.). Two passed Filey Brigg on August 5th (E.H.W.), and one on September 16th (R.H.A.). South Gare had four as late as October 20th (G.S.T.). At Spurn single birds occurred on August 6th (J.C.), August 19th (M.D., G.R.N.), August 22nd and September 8th. Two were at Hornsea Mere on August 19th and 24th (G.R.B.). Three at Stone Creek on September 27th (A.C.). Flamborough showed 13 on August 21st (Miss R. B. Outhwaite), with six still there next day (A.J.Ws.). The main concentration occurred at Cherry Cob, where following a single bird on July 30th the species appeared regularly on 25 dates up to December 5th, with a peak of 21 on October 22nd (G.R.B.) and apparently a small wintering flock settled in the Lower Humber area. These post-breeders first appeared at Fairburn from the west and departed south-east. Speculations concerning their origin should not ignore Southern Iceland where the species breeds in fair numbers.

155. Bar-tailed Godwit (386).—Always some at Spurn except from May 26th to July 15th. Spring maxima, 88 on January 2nd, *c.* 150 on February 15th to 17th and *c.* 50 on March 4th. Occurred daily from August 19th with maximum 25 on September 16th, but scarce with none on some days until November 25th (33) and November 26th (*c.* 100). Up to *c.* 90 on days in December. A few on August 11th at Cherry Cobb Sands were the first there, building up to maxima of 236 on November 18th, 442 on November 26th, and 104 on December 2nd (G.R.B.). Inland—one at Winterset Reservoir on August 21st (C.E.A., G.R.A.); two at Stanley S.F. on September 3rd (J.A.B.); one at Wath Main Ings on September 10th (C.B., G.R.A.); at Fairburn five on July 29th, one on August 7th, one on August 31st; and at Settle S.F., one on September 26th (A.P.).

156. Green Sandpiper (424).—Recorded during normal dates, except for some later records of possibly wintering birds. Spring records were few with none in the East Riding except one at Spurn on April 28th. Last at Fairburn on April 23rd and first of autumn at Almholme, two on July 4th. Two June records are difficult to place—one at Harlington Flash on June 22nd, and one at Eccup on June 18th. In autumn recorded from at least 25 localities in singles or small parties. Largest numbers, six at Spurn on August 14th, five at Cherry Cobb Sands on August 11th and 24th, ten at Wath Ings on July 23rd (A.A., D.J.S.), 13 on August 13th (D.J.S.), four on October 28th were seen regularly to the year end (A.A.). One at Cawthorne Dyke on July 9th was also recorded irregularly to the year end (G.T.).

157. Wood Sandpiper (423).—At Fairburn, two on May 21st, one on May 22nd, two on August 8th; at Spurn single birds on May 30th, June 26th, July 16th, and one or two daily from August 9th to 18th; two on September 18th and one on October 9th. Four were by a flood at Barmston on May 27th (A.D.B.) and one at Potteric Carr on May 2nd (R.M. *et al.*). Between July 30th and October 8th single birds at Patrington Haven, Winterset Reservoir, Scaling Dam, Hornsea Mere (three), Blackmoorfoot Reservoir, Brandsburton G.P. (two), Swillington Bridge, Stanley S.F., Cherry Cobb Sands and Woodhouse Mill, Sheffield.

159. Common Sandpiper (421).—First at Eccup on April 2nd, followed by two at Esholt S.W. (J.C.P., J.R.C.) and one at Scaling Dam (D.G.B.) on April 7th;

three near Masham on April 8th (E.E.J.). Reached full strength at Gouthwaite by April 29th (M.R.S.), with peak *c.* 50 from July 9th to 11th (A.F.G.W.). On May 18th there was a total of 34 birds in the Fly Flatts area (D.A.S., J.C.P.), and a pair bred at Denaby Ings (J.B.H.). Autumn passage was somewhat irregular with small numbers from several localities, double figures being reached from only Hornsea Mere, 14 on July 9th, 13 on August 19th, 12 on September 3rd (G.R.B.) and 15 at Fairburn on September 4th. Last seen at Eccup on October 8th.

161. Redshank (428/30).—Return inland was early—at Swillington two on February 13th (K.D.), with the next at Gouthwaite on February 25th (M.R.S.). Ten at Fairburn on March 4th, 15 on March 26th; 15 at Almholve on March 25th (R.J.R.); and 15 at White Holme Reservoir on April 1st (A.D.W.). Mud at Gouthwaite in March attracted unusual numbers, *c.* 50 on March 16th and *c.* 45 on March 26th (P.J.C., A.F.G.W.). There was an obvious spring exodus at Patrington Haven where records were *c.* 750 on April 15th, *c.* 100 on April 29th, *c.* ten on May 4th (H.O.B.). Spring maxima at Spurn, *c.* 200 on February 19th, March 4th and April 7th. Autumn maxima *c.* 225 on July 15th, *c.* 300 on July 30th, *c.* 200 on several August days and *c.* 500 on September 1st. Inland in V.C. 63 occurred in small numbers at eight localities between October 21st and December 10th, while in the freeze-up single birds appeared at Gouthwaite on December 27th (W.C.W.) and Knaresborough S.F. on December 28th (W.H.J.).

162. Spotted Redshank (431).—Mainly recorded from the coastal side of the county. Inland one at Almholve on March 25th (R.J.R.); at Fairburn, one on May 18th, four on September 24th, two on September 30th, three from October 1st to 6th; at Gouthwaite a fine adult in full breeding dress on June 22nd, and two on August 8th (A.F.G.W.); at Stanley Ferry, one on August 27th (C.E.A.); at Settle S.F., two on September 26th (A.P.). In the coastal area Spurn had single birds on February 4th, 11th, 13th, and April 2nd, 3rd and 6th; Cherry Cobb Sands, one on January 12th (S.M.); Patrington Haven, one on April 15th and three on April 29th (H.O.B.). In autumn first was one at Scaling Dam on July 23rd (D.G.B.) with ones or twos recorded from Redcar, Filey, Flamborough, Hornsea Mere, Spurn and Patrington Haven, the last at Spurn on October 15th, except for birds at Cherry Cobb Sands. There the first was seen on July 30th, and up to five (September 9th and November 18th) were recorded on many dates in August, and 13 dates to December 2nd (G.R.B., H.O.B.).

165. Greenshank (432).—One at Patrington Haven on March 12th (A.C.) was the first. At Spurn noted on five days in April and from May 18th to 23rd (four on May 20th). One at Patrington Haven on May 4th to 13th (H.O.B.); Scaling Dam, May 5th and 22nd (D.G.B., H.R.); Fairburn, three on May 17th, two on May 18th, one on May 22nd and 23rd. One at Blaxton on June 5th (J.B.H., A.E.H.). Autumn records too many to be fully listed. The movement began with one at Eccup on July 1st and one at Hornsea Mere on July 9th (G.R.B.), and thereafter records of singles and small parties were received from all parts of the country, including as the largest 19 at Spurn on September 3rd; 14 at Swillington Bridge on August 27th (D.A.R.); nine at Wath Main Ings on August 13th (A.A., G.R.A.); seven at Filey Brigg on September 20th (R.H.A.); six at Swinsty Reservoir on September 3rd (W.F.F.) and five at Scaling Dam on September 7th (D.G.B.). Cherry Cobb Sands had probably the greatest number passing through, and between July 30th and November 20th varying numbers up to 14 on one day were recorded on 22 dates, maxima 14 on August 18th, 13 on August 26th (G.R.B., H.O.B.). Late records other than at Cherry Cobb—last at Spurn on October 29th; one at Ulley Reservoir October 27th (F.N.B.); one at Broomhill up to November 5th (A.A.); one at Eccup on November 25th.

169. Knot (403).—At Spurn up to *c.* 2,500 in January, *c.* 3,000 in February, and *c.* 4,000 in March. After *c.* 800 on April 23rd numbers fell and the species became scarce until July 15th (40). Teesmouth had between 6,000 and 10,000 in February, and on January 12th a count of between 12,000 and 14,000 was made between Paull and Patrington Haven (S.M.), where large numbers were seen at the tidal flight on April 2nd, 15th, and 29th (with none on May 4th) (H.O.B.).

In autumn, after July 15th, at Spurn seen daily, but parties were comparatively small, with occasional larger flocks as on October 3rd (*c.* 1,200) until October 24th (*c.* 4,000 on October 25th). Unusually small numbers at Cherry Cobb Sands and Patrington Haven during August and September, with moderate numbers only on September 23rd, and only reaching *c.* 1,000 on October 22nd (G.R.B., H.O.B., A.C.).

Away from the coast and estuaries occurred—one in full summer plumage near Masham on April 2nd (E.E.J.); at Fairburn, single birds on July 28th to 29th, one on September 6th, one on November 5th; at Gouthwaite, eight on July 26th (D.G.L.), one on August 8th (W.C.W.); at Swillington, one in full summer plumage on August 5th (D.A.S.), 40 in two parties on July 25th at Eccup; single birds at Woodhouse Mill, Sheffield, on July 16th (R.G.H.), White Holme Reservoir on August 10th (V.S.C., I.M.), Winterset Reservoir on August 19th and October 21st to 22nd (J.A.B., J.S.A. *et al.*), Southfield Reservoir on November 12th (R.J.R.), and two at Scaling Dam on August 10th to 11th (J.L.).

170. Purple Sandpiper (415).—The flock at Filey Brigg was about 60 strong from January 1st to April 29th, when the last were seen; the first returned on July 23rd, another early record, and the number in the autumn did not exceed 20 on August 26th (R.H.A.). At Flamborough, *c.* 30 on February 5th (D.A.G.); at Bridlington, 28 on November 19th (D.A.G.); ten at Hornsea on December 10th (G.R.B.); singles at Cherry Cobb Sands on March 26th (F. de B.); Fraisthorpe, October 10th (J.F.); Spurn, April 19th. Six on the Chalk Bank shingle on November 1st were most unusual (R.C.). Staithes had a flock of 26 on April 2nd (W.K.R.).

171. Little Stint (407).—More were recorded at Winterset Reservoir than any where else in the county; between July 31st and September 17th birds were recorded on 13 dates reaching a maximum of seven on August 19th, 25th and 27th (J.A.B. *et al.*). Elsewhere single birds from late July to late September occurred at Gouthwaite, Broomhill, Hornsea Mere, Flamborough, Filey Brigg, Patrington Haven, Fraisthorpe and Scaling Dam. Cherry Cobb Sands had two on August 22nd (J.C.H.L.) and three on October 30th (G.R.B.). At Spurn occurred on July 15th and from September 4th to September 10th (two) and on September 30th. Spring records: single birds at Fairburn on May 14th and June 2nd, and at Barmston on June 7th (A.D.B.).

173. Temminck's Stint (409).—At Fairburn, one from May 16th to 27th with two from May 28th to 30th, one on May 31st and June 1st.

178. Dunlin (404/5).—Generally bred in the many haunts where usual (R.C.). Occurred by many inland waters during spring and autumn migrations, also as usual. Spring maxima: 17 at Fairburn on April 9th and May 13th; 17 at Gouthwaite on June 4th, and 30-40 from June 22nd to July 4th (A.F.G.W. *et al.*). Autumn maxima: 15 at Stanley S.F. on August 20th (C.E.A.); 45 at Winterset on August 13th, and some remained into December with 17 on November 5th to 19th, and 21 on November 21st (D.J.S. *et al.*); 18 at Fairburn on September 2nd; 33 at Swillington Bridge on August 26th (D.A.R.); and 20 at Broomhill on August 20th (G.R.A.).

At Spurn always present somewhere. Congregations in January and February reached *c.* 1,500 on several days and averaged *c.* 500. Numbers remained large in March to mid-May. In autumn numbers fluctuated between *c.* 100 and *c.* 1,800 with an average of *c.* 500. Maxima: *c.* 1,800 on September 24th, *c.* 1,200 on October 8th, and *c.* 1,000 on several dates. Up the Humber between 4,000 and 5,000 were counted between Paull and Patrington Haven on January 12th (S.M.); *c.* 3,000 at Cherry Cobb Sands on May 2nd (H.O.B.); *c.* 3,000 at Patrington Haven on May 18th (H.O.B.). At high tide 96 were with 59 Ringed Plovers on a ploughed field at Redcar on January 15th (D.R.S., D.G.B.).

179. Curlew Sandpiper (406).—Not one recorded at Spurn, which is most unusual. Inland single birds at Fairburn on July 18th and August 4th; three at Winterset Reservoir from September 30th to October 4th were not present on October 8th, but four seen on October 20th (R.N.R. *et al.*); one at Scaling Dam on September 24th (D.G.B.). On the coast and up the Humber—one at South Gare on October 20th (G.S.T.); five at Brough salting on August 20th (L.S.); at Patrington Haven, one on September 22nd (T.D.B.), three on October 29th (A.C.), a late date; at Cherry Cobb Sands, four on July 30th, August 5th and 18th, two on August 26th and 28th, two on September 23rd (G.R.B., H.O.B.).

181. Sanderling (416).—Up to 350 (on January 14th) on Redcar beach in first part of the year; not seen between May 21st and August 15th; up to 200 present to year end (D.R.S.). At Spurn recorded on most days with maxima of: 42 on March 17th, *c.* 30 on May 25th and 30th, 40 on May 31st, 42 on June 2nd, *c.* 30 on July 26th, 59 on August 2nd, *c.* 70 on August 6th, 27th and 28th and September 11th, *c.* 90 on September 24th, *c.* 150 on October 9th, *c.* 100 on October 11th and November 6th, and 73 on December 17th. Inland single birds at Fairburn on March 26th; Blackmoorfoot Reservoir on August 20th (D.M. *et al.*); Whiteholme Reservoir

on August 24th (V.S.C., I.M.); two at Winterset Reservoir from August 25th to 28th (C.E.A. *et al.*). One caught at Dunsville on May 12th (T.G.).

184. Ruff (417).—The East Riding again saw the most of the species. Spring records were at Spurn, one on February 25th, one on March 14th, five flying south (and one in Beacon area) on March 18th; one at Ilkley on March 24th (R.C.P.). The first of autumn came to Fairburn on July 30th, where the species continued present to September 11th with maximum of eight on August 26th. Other records, mainly single birds, come from sewage farms, Saltings, etc., in about 20 localities; maxima of which were four at Broomhill on August 10th (D.J.S. *et al.*); 12 Brough saltings on August 20th (L.S.); 23 off Hornsea on September 15th and 13 on October 8th (G.R.B.); and eight at Fairburn on August 26th. Occurred at Spurn on 16 days in August-September, nine on September 3rd being most in a day. One was recorded on October 23rd, the day following one off Hornsea (G.R.B.).

187/188. Phalarope Sp. (400/401).—A bird occurred on water in the lagoons area at Spurn on August 14th, and one on the sea, c. 30 yards offshore at the Point on November 15th. Both were thought to be 'Red-necked'. Of the first bird no mention was made of the bill, the other is described as 'uniformly very dark bill and equivalent to length of head'. Neither is described specifically convincingly, but both were obviously phalaropes.

187. Grey Phalarope (400).—One at Eccup Reservoir from August 26th to September 5th (G.R.N., K.D. *et al.*); one at Cherry Cobb Sands on September 16th (H.O.B.); one at Patrington Haven on September 22nd (T.D.B., T.B.S.); one at South Gare on October 20th (G.S.T.) was watched at very close quarters and yellowish base of bill and extent of black behind eye was noted.

188. Red-necked Phalarope (401).—A bird in summer plumage was seen at Harlington Flash on June 7th, but had moved on the following day (C.I.B., J.B.H., A.E.H., B.B.).

189. Stone Curlew (456).—One seen on Sheffield refuse tip at Woodhouse Mill on September 2nd (R.G.H., F.N.B.).

193. Arctic Skua (493).—One at Hornsea on April 29th (G.R.B.) was the first of spring, with single birds at Spurn on four days from May 13th to 23rd, four on May 26th, ones on June 1st and 29th all of the first half-year. None in spring at Redcar (D.R.S.), but two at Staithes on June 27th (H.R.).

Seven at Filey Brigg on July 15th were first of return passage (R.H.A.), which was normal from August onwards. Peak numbers at Filey Brigg were 88 on August 19th, and 81 on September 7th (R.H.A.); ten at Hornsea on October 7th, and five as late as November 19th (G.R.B.); c. 130 on September 4th at Spurn where six on November 3rd were the last. Passage was normal at Redcar; a light phase adult on August 31st flew inland and was lost to sight picking its way between T.V. aerials low over the house tops (D.R.S.). At Gouthwaite, one on July 4th, after strong north-west winds, flew down the reservoir, put up some teal and disappeared north-west (A.F.G.W.). One occurred at Eccup on November 4th (M.D., J.C.R.). One flew north over Fly Flatts Reservoir on October 26th (J.C.P.).

194. Great Skua (491).—At least ten at Spurn on May 21st. On June 2nd a freshly dead bird was collected from Withernsea Police Station—it had swallowed fishing tackle! One at Flamborough on July 9th (J.C.), five on September 19th (A.J.Ws.); one at Hornsea on July 29th, followed by two on October 7th, one on November 4th, and two on November 11th and 13th (G.R.B.); at Redcar, four flying north-west, a little inland, were in the field of view with migrating hedge-sparrows—a strange mixture!; one on October 19th, two on November 3rd, two on November 12th (D.R.S.); at Filey Brigg single birds on August 19th to 20th, September 2nd to 5th, with five on September 7th, two on September 8th, five on September 23rd, one on October 8th (R.H.A. *et al.*). Recorded at Spurn on April 2nd and on four days in August, 11 days in September, four days in October (maxima six on September 7th, eight on October 17th).

195. Pomarine Skua (492).—Recorded at Redcar, four flying north-west on October 17th (D.R.S.); Hornsea, one on July 23rd, two on August 26th, three on October 7th, one on October 28th and 29th (G.R.B.); Spurn, one on July 24th (M.D., C.R.) and one on October 25th (P.H.G.W.); Filey Brigg, three on September 7th, one on October 7th (R.H.A.).

196. Long-tailed Skua (494).—One chased Sandwich Terns at Spurn on August 26th, and although central tail-feathers appeared short, the slim build, small

size and general description enabled identification of this light phase bird. One immature flew north-west at Redcar on September 3rd (D.R.S.).

198. Great Black-backed Gull (486).—The species continues to appear inland increasingly. At Gouthwaite, 50+ were roosting on February 4th; two adults returned as early as August 2nd, and the species was more numerous thereafter than ever before, with 40+ on November 26th and December 23rd, increasing to *c.* 165 on December 25th in hard weather. At Eccup maxima were—100 on January 22nd, small numbers in each month except September; 38+ on November 26th and 52 on December 8th occurred at numerous other inland localities, mainly in January, February, November and December, including *c.* 40 at Leighton Reservoir on November 16th (R.C.); 21 at Chelker Reservoir on November 12th (D.A.S.); 30 at Knotford Nook G.P. on November 17th (P.S.); 15 on rubbish tip at Harrogate on December 23rd (A.F.G.W.); seven flew over Adwick-le-Street on November 19th (R.J.R.); 14 flew over Armthorpe S.F. on December 24th (T.G.); five at Worsborough Reservoir on December 31st (A.A.).

Nearer the coast, Scaling Dam was visited regularly by flocks of up to 50 or more, e.g. *c.* 500 on August 10th (J.L.), and varying numbers move inland into the Vale of Pickering each day during both spring and autumn. At Spurn remains the most numerous gull. *Circa* 200 and *c.* 150 on April 19th to 20th indicated spring passage. Between 30 and 50 immature birds in late July began the autumn build-up, with maxima of *c.* 450 on September 3rd to 4th, *c.* 960 on September 15th, *c.* 1,300 on September 16th, *c.* 1,500 on September 28th, and *c.* 850 on October 15th.

199. Lesser Black-backed Gull (484/5).—Maxima at inland roosts were: at Eccup, 425+ on March 3rd, 130 on April 16th, 100 on May 11th, 100 on June 11th, 450+ on July 28th, 2,000+ on August 10th, 2,500 on September 21st. At Fairburn, 122 on May 16th, 500 on June 1st and July 24th, 600 from August 2nd to 9th, and 400+ on December 26th. Gouthwaite had much smaller numbers, with a peak of *c.* 100 on November 5th. There were 200-300 on all dates from early July to mid-September at Woodhouse Mill, with maximum of 450 on September 4th (R.G.H.). On a rubbish tip at Harrogate on May 6th, up to 50% of the *c.* 250 present were immature (A.F.G.W.). At Knaresborough S.F. 131 flew north in one flock on May 27th; 180 flew north on June 1st, and 84 on June 3rd (J.R.M.). At Hampsthwaite *c.* 200 wintered at slaughterhouse tip (P.J.C.). An adult was at Whiteholme Reservoir on January 9th (V.S.C.); four adults at Blackmoorfoot Reservoir on February 4th (R.Cr.); two over Hangthwaite on April 2nd (R.J.R.); and *c.* six at Woodhouse Mill on April 4th (R.G.H.). Maxima at Spurn were 14 on August 26th and 35 on September 16th; the Scandinavian race occurring on 16 days. This race was also recorded at Knaresborough S.F. on April 13th (J.R.M.); at Leighton Reservoir on October 30th (P.Y.); at Ilton Reservoir on November 23rd (P.Y.); at Scaling Dam on October 15th (B.J.C.).

200. Herring Gull (482).—Maxima at Eccup roost were 1,000+ on January 23rd, 220+ on August 10th, 50 on November 11th, 2,000 on December 8th. At Hampsthwaite *c.* 100 were present on November 16th (P.J.C.), and *c.* 350 at Harrogate rubbish tip on December 23rd (A.F.G.W.). *Circa* 409 on January 29th was much the largest number on any day in the year at Spurn—a southward inshore passage with Common Gulls.

201. Common Gull (481).—Eccup roosting maxima were: 1,000+ on March 3rd, 480 on July 28th, 1,120+ on August 10th, 1,000+ on December 8th. At Gouthwaite passage in late spring was unusual—32 flew north-west on April 29th, seven on April 30th, three on May 10th. An immature had returned by June 24th and single adults were early on June 29th and July 6th; the roost had built up to 55 by August 7th. At Fairburn nine flew east on April 30th. A passage of gulls at Spurn on February 11th included *c.* 680 Common Gulls, possibly returning continental birds. Estimates exceeded 100 on 46 dates during the year, covering each month except July, with maximum *c.* 1,000 on November 26th, when small flocks were scattered over the Humberside.

202. Glaucous Gull (487).—At Spurn, a slightly oiled first winter bird on February 5th; one on February 11th; one near Chalk Bank on April 7th was immature; one in Sharpe's Bay on April 13th was also immature; a biscuit-coloured bird flew south on November 19th; and an immature Glaucous/Iceland flew south on December 30th. An immature was seen on the Hull water front on March 4th (B.S.P., A.M.G.); one flew north-west at Redcar on April 8th (D.R.S.); one at Scarborough on January 21st (R.N.A.); two immatures on January 22nd and one

on January 28th in Scarborough Harbour (T.M.C.); a first winter bird at Filey Brigg on November 25th (R.H.A.). An immature, probably second year, at Teesmouth on June 23rd was late (D.G.B.), and an adult at Tunstall on August 17th was early (F. de B.).

203. Iceland Gull (488).—No conclusive records.

207. Little Gull (477).—Inland one was seen at Blackmoorfoot Reservoir on April 29th (D.M.), and a juvenile flew west at Fairburn on September 3rd (C.W.). Along the coast records were more numerous than usual in the autumn, with only one spring record, an immature at Spurn on January 28th (C.W., L.P., T.G.), where single immature birds occurred on August 8th and 30th, September 10th and 14th, and October 8th. At Hornsea Mere singles occurred on nine dates between August 8th and October 29th with two on August 19th and September 9th (G.R.B. *et al.*). At Filey Brigg singles on August 19th to 27th, September 17th, and two on September 23rd and 30th (R.H.A. *et al.*). Three occurred off Hornsea on August 27th (G.R.B.). An adult flew north past Scarborough on July 21st (R.H.A.). Single adult birds flew north-west at Redcar on September 2nd and 12th (D.R.S.).

208. Black-headed Gull (478).—In the great gull movement of February 11th at Spurn, this species predominated (*c.* 1,450), as it did also on February 19th (*c.* 650). These figures were not approached in the autumn movements when *c.* 400 on July 11th and *c.* 300 on October 15th were maxima. On October 21st the species was exceptionally numerous at Almholme; every field had up to 50 birds, with others moving in all directions making a count impossible, but thousands were involved (R.J.R.). At Eccup roost maxima were 6,000 on January 6th, 3,000 on March 3rd, *c.* 10,000 on November 4th. At Fairburn 700+ on February 18th increased to 1,800+ by April 30th.

209. Sabine's Gull (474).—On September 11th a bird in summer plumage crossed the Spurn peninsula and alighted on the Humber mud. The dark grey head with black on neck could be seen, and in the sunlight the wing pattern of black primaries, white secondaries, and grey wing coverts and mantle were conspicuous as it flew (J.C., A.A.).

211. Kittiwake (489).—Coastal movements were normal with other years. In a strong north wind on March 18th several hundred were blown up the Tees Estuary in flocks of up to 120, 50 being seen over Middlesbrough (R.T.M. *et al.*). On October 17th, during a north-west movement one bird was seen to be quite pink, rather blotchy, presumably the result of a marking scheme (D.R.S.).

Inland occurred: one at Eccup on March 13th and two on March 21st; three (two adults) at Winterset Reservoir on March 5th left to the east after early morning fog (J.S.A., J.A.B.); an adult at Southfields Reservoir on May 7th (R.J.R.); on November 5th an adult at Gouthwaite and 14 at Fairburn.

212. Black Tern (462).—Spring passage inland was less marked and lasted from late April into June, mainly single birds or up to four together recorded at Fairburn, Gouthwaite, Eccup, Grimwith Reservoir, Swillington, Winterset Reservoir, Locker Tarn, Barmston and Scaling Dam. Larger numbers include eight at Fairburn on April 28th, ten at Swillington Main Ing on April 29th, 11 at Winterset Reservoir on May 13th, 22 at Spurn on May 13th. Autumn passage mainly along the coast with two at Hornsea Mere on August 7th, and up to three on many days to September 16th, and two late birds on October 2nd (G.R.B.). Seven at Spurn on September 6th, and seven at Tunstall on August 3rd (F. de B.). Few records from inland localities in autumn.

213. White-winged Black Tern (464).—Two at Chelker Reservoir on May 13th (O.M.P., W.F.F., A. Riley).

217/218. Common and Arctic Terns (469/470).—Both spring and autumn passage were normal, with only small parties recorded inland. Seven moving north off Hornsea on March 31st were the first (G.R.B.) with main passage at Spurn May 13th (60+) and May 14th (35). Maxima—at Fairburn 11 on June 11th, at Eccup 12 on August 8th, 16 at Woodhouse Mill on July 13th (R.A.F.), 11 at Whiteholme Reservoir on August 19th (V.S.C., I.M.). Off Hornsea 383 passed south on October 1st (G.R.B.), but highest number in one day at Spurn was 190 on August 27th. A late bird flew north-west near Heck Station on October 19th (E.W.E.). A pair of Common Terns successfully bred in South Yorkshire; and a bird was watched back to a nest with one egg on June 23rd in the North Riding (L.M., D.G.B.).

219. Roseate Tern (468).—At South Gare two were seen on August 5th (D.S.-S.), and an adult was watched feeding a juvenile on September 1st (D.R.S.).

Four passed Filey Brigg on September 8th (R.H.A.). A Spurn one on July 17th (P.J.M.) and one on July 28th (C.W.).

222. Little Tern (471).—First was a single bird at Winterset Reservoir on April 22nd (J.S.A. *et al.*), with first at Spurn on April 23rd. Up to 30 recorded in June; eggs were produced but the only young seen were trodden by school-visitors in July. Up to 70 recorded in July and passage after July 25th consisted of up to three on five days to August 27th. No successful breeding was proved at Teesmouth, though up to eight pairs tried at South Gare. One was seen at Fraisthorpe on June 28th (J.F.); one at Woodhouse Mill on July 13th (R.A.F.); two at Hornsea on July 27th, and one on October 1 (G.R.B.).

223. Sandwich Tern (467).—The first were single birds at Staithes on April 5th and South Gare on April 7th, followed by three at Spurn on April 10th, where passage was normal and the species the most numerous tern during autumn passage south. The last at Spurn were single birds on October 14th and 22nd, but later records were made at Hornsea, single birds on October 28th, November 12th and 25th (G.R.B.). Inland two flew west at Fairburn on August 26th; and five at Ilkley S.F. on June 25th (L.G.D.).

224, 227, 230. Razorbill, Guillemot, Puffin (496/499/503).—A sea watch at Spurn on May 21st showed *c.* 250 auks passing in 13 hours; 46 were identified as Razorbills, 27 as Guillemots and seven as Puffins, 170 not identifiable specifically. Extra prominence of Razorbills probably due to easier identification as the numbers on the breeding cliffs remain fewer than for the Guillemot. Two thousand Guillemots on July 15th and 400 on July 22nd off Filey Brigg fit in with desertion dates of Bempton breeding colonies (R.H.A., H.O.B.).

226. Little Auk (502).—Small numbers occurred at several points during early November. At Spurn one on November 3rd, eight on November 4th; Hornsea, nine on November 4th, four on November 11th (G.R.B.); Flamborough, four on November 19th (G.R.B.); South Gare, one on November 4th and 5th (D.G.B.). A bird found at Holmwood Grange, near Armthorpe, on November 5th, was released at Blaxton two days later (T.G. *et al.*). A recently dead bird which had begun complete body moult was near the Beacon at Spurn on March 24th (P.J.M.).

232. Stock Dove (381).—Occurred at Spurn on a few days in every month; maxima eight on three days in January to March, all when Wood Pigeons were numerous.

234. Wood Pigeon (380).—At Spurn occurred in numbers exceeding 50 on 20 days from January 1st to June 4th. Numbers in July to November were small, but December passage was heavy on eight days. In more detail: 725 on January 1st flew south in several flocks (the day 1,079 passed south at Hornsea (G.R.B.)), and on January 2nd, 13 crossed the Point; on January 31st straggling flocks arrived at great heights. The majority of birds recorded flew southwards, but in December directions of flight were various. On December 2nd *c.* 140 came in two parties from the south-east. On December 5th *c.* 500 flew south at 08.00 hrs., and *c.* 2,000 north at 12.30 hrs. On December 11th with a total of 10,000, large flocks again flew in contrary directions—at 13.20 hrs. *c.* 1,800 flew north; *c.* 2,000 flew south, circled at a higher level and then went north; at 13.55 hrs. a vast high straggling flock of *c.* 6,000 went south until lost to sight, with smaller parties going north at a lower level. Whether these flocks come from North Britain or from overseas is still very puzzling, and is not helped by records of flights of inland flocks. A few seen at Spurn came in from the sea, and in March at Redcar small numbers also came in off the sea (D.R.S.). The build-up at Hornsea of 15,000 to 20,000 birds from November 25th onwards would appear to require an influx from the Continent to account for such numbers. Inland in South Yorkshire in November and December flight movements were contrary with 2,000 moving west high over Adwick-le-Street on November 18th (W.G.D.), but 3,200 moving east there on November 19th (R.J.R.). Northerly flights occurred over Doncaster (*c.* 520) and Armthorpe (*c.* 1,300) on November 21st (T.G.); and *c.* 800 flew south-west over Low Laithes, Ossett, on December 29th (A.F.). At Eccup a regular north-east evening flight line gave counts of up to *c.* 4,600 between January and mid-March when it stopped.

235. Turtle Dove (383).—A bird at Worsborough Reservoir on April 23rd (A.A.) was the first, followed by one at Hornsea on April 29th (A.R., A.W.), and one at Denaby Ing on April 30th (J.B.H., A.E.H.). The peak passage came at Spurn on June 17th, with *c.* 50, and in autumn the last was recorded at Spurn on September 29th. The species was not recorded at Bretton Park where ten years ago it was a regular and not uncommon breeder (J.C.S.E.).

— **Collared Dove**.—The spread of the species continues, and records have been received from at least 16 different localities with definite proof of breeding from at least five of these. Although still predominantly found near the coast the spread inland has reached Sheffield and Leeds. Numbers seen together vary from threes and fours to a flock of 20 at Rudston on November 26th (H.O.B.).

237. Cuckoo (240).—An early bird was heard at Embsay on April 1st (E.G.), thereafter arrival dates were normal. Comments include 'very few seen' around Sheffield (R.G.H.); 'seemed very scarce locally' near Halifax (A.D.W.); 'numbers much reduced' at Bretton, Ingbirchworth and around Huddersfield (J.C.S.E.); 'decreased generally' (J.P.U.).

241. Barn Owl (254).—Records from 16 localities, with nesting records from four included. A corpse submitted to a veterinary laboratory was reported to have swallowed a House-Sparrow tail first (G.F.O.).

246. Little Owl (249).—Reported as scarce in Sedbergh area, where a farmer claims to have shot several in the last few years (Sedbergh S.S.). At Spurn noted on four days in February to June and on eight days in October to December.

247. Tawny Owl (253).—The albino found near Millthrop (Sedbergh) last year again nested but the brood did not survive (Sedbergh S.S.).

248. Long-eared Owl (250).—Only four records. Two near Hessle on February 6th (W.B.S.); one at Fairburn on August 17th; breeding proved east of Doncaster (R.M.) and west of Sheffield (D.B.C.).

249. Short-eared Owl (251).—Reported as plentiful or very numerous from most of the moorland areas of the north-west and west of the county and also from the Doncaster area. Breeding records from five localities involved at least seven pairs and the species probably bred near Langsett, where it was present throughout the year (C.B. *et al.*), and at Hatfield Moor (R.J.R.). Short-tailed field voles were reported very numerous round Upper Nidderdale, probably in plague proportions. Records of single or up to five birds were received from 21 other scattered localities, and the species was recorded at Spurn in every month except January and February.

252. Nightjar (227).—A pair bred at Blaxton (A.E.P., J.B.), and three pairs were located in one area north of Harrogate (M.R.S.). Churring was heard at Hatfield Moor (A.A.) and on May 20th in a fresh area south of the river at Masham (E.E.J.). A male was found on the road at Gouthwaite on May 26th (A.S.). Otherwise, it failed to breed in several areas where usual.

255. Swift (225).—A single bird at Spurn on April 21st, two at Fairburn on April 22nd; singles at Rockley (A.A.), Harrogate S.F., Ilkley and near Bramham with four at Worsborough Reservoir on April 23rd; four at Esholt S.W. on April 24th; two at Gouthwaite on April 25th were the earliest. Passage in May was steady, but the peaks were reached in June, beginning at Spurn on June 15th (*c.* 250) with *c.* 3,000 on June 17th and 22nd, and *c.* 1,000+ for the next three days. June assemblies at Fairburn were 700 on June 17th, 400 on June 22nd, and 800 on June 26th, when many were flying west. Numbers at Hornsea Mere reached *c.* 2,600 on June 11th, *c.* 5,400 on June 18th, and had again reached a figure of *c.* 3,400 by July 16th (G.R.B.). Present in Hull until much later than usual, five on August 28th in one area, and at another site until September 14th (H.O.B., A.R.). Also later in Harrogate area; *c.* 240 flew north-west up Gouthwaite in one hour on August 19th, and *c.* 70 over Harrogate on August 25th. Heavy passage in July at Spurn continued on a smaller scale during August. On August 5th there was a definite movement westwards over Whiteholme Reservoir (V.S.C., I.M.), and 150 flew south-west in five minutes on August 20th over Hatfield Moor (R.J.R.). Late birds—singles at Hornsea Mere (G.R.B.) and Adwick-le-Street (R.J.R.) on October 1st, and near Sedbergh on October 2nd (Sedbergh S.S.). A freshly dead bird of the year was picked up at Brockholes, near Holmfirth, on October 28th, weighing 35 grammes (J.C.S.E., A.N.S.).

258. Kingfisher (234).—Again all too few records have been received. Recorded from four localities in Harrogate area, one from three others in V.C. 63. Seen near Marske-on-Swale on July 11th (E.C.S.) and bred near Masham (R.C.). Seen on the Rye at Duncombe Park, Helmsley, for the first time since 1956 (C.D.M.), and between Rievaulx and Helmsley (P.R.E.). One was seen at Skelton Ellers on September 18th (A.B.).

261. Hoopoe (232).—One at Hull on April 26th to 29th (B.S.P. *et al.*). Single birds from August 9th to 16th, with two present on August 10th at Spurn.

263. Great-spotted Woodpecker (236/7).—Drumming was heard near Harrogate on February 3rd (C. Worrin). In November single birds were recorded

at Whitwood Mere, Glasshoughton and Townville, all built-up areas of Castleford, with little in the way of trees in the neighbourhood (R.F.D.). Out of 36 nest boxes in Scaba Wood, Sprotborough, only one was attacked by this species, but in Melton Wood, Sprotborough, six out of 12 were successfully attacked (J.B.H. *et al.*). One on April 14th south of the Point trap; one flying south at Narrow Neck at Spurn on April 23rd.

264. Lesser-Spotted Woodpecker (238).—Recorded from Ripley, Eccup, Harewood, Golden Acre Park (Leeds), Hebers Ghyll, Ilkley, Stainborough and Esholt. Bred at Sandall Beat, Doncaster (D.K.). Single birds were seen at Rockley Dam on October 15th (G.R.A.); Chellow Dene, Bradford, on December 3rd (D.A.S., J.R.C.) and at Staithes on December 17th (H.P.K.R.).

265. Wryneck (239).—Single birds in warren area at Spurn on August 24th and 25th, and one caught on September 4th. One found dying near Aldbrough on September 7th is now in Hull Museum (Mrs. S. E. Fewson).

271. Woodlark (69).—Single birds at Spurn on March 12th, May 7th, October 22nd and 23rd. One flew west over Esholt on May 14th (J.R.C.).

272. Skylark (70).—Dates and numbers involved in the spring passage were almost identical with 1960. In the autumn the main movements were slightly later and did not include such large concentrations, the maximum at Spurn being only *c.* 1,000 on November 7th, although a higher total of *c.* 1,200 was seen passing south at Hornsea as early as October 1st, with *c.* 800 on October 8th and *c.* 500 on October 29th (G.R.B.). Inland breeding birds returned to Middlesmoor by February 13th and were numerous by February 19th (D.S.). Inland autumnal movements include *c.* 100 at Bentley Tilts on September 17th (R.D.M.); *c.* 120 at Armthorpe on December 26th (T.G.); *c.* 1,100 flew south-south-west over Low Laithes, Ossett, in 2½ hrs. on December 31st (A.F., R.W.), the day small parties passed almost continuously to south-west over Sheffield (R.G.H.).

273. Shorelark (72).—Recorded only in the East Riding. At Spurn up to 24 on many days from January 1st to March 6th, with single birds on six days to April 8th. Re-appeared on October 25th, four on November 19th and 20th, and up to seven on six days in December. Elsewhere, four on Filey Brigg on April 8th were only spring records (R.H.A., E.J.W.). In autumn at Flamborough one on October 16th (A.J.W.), 14 on October 26th (G.R.B.), four on October 29th (P.R.E., A.F.G.W.), five+ on December 10th (H.O.B.) and 24 on December 26th (G.R.B.) would indicate a wintering party. There were two at Atwick on October 22nd (G.R.B.), two at Aldbrough on December 2nd (G.R.B.), and one near Bridlington on December 24th (G.R.B.).

274. Swallow (220).—The first and only March record was a single bird at Winterset Reservoir on March 31st (J.A.B.), with records from most parts of the county following during the early days of April. Major spring passage at Spurn came with *c.* 350 on May 6th and 13th, and *c.* 300 on May 19th, and at Hornsea *c.* 1,600 were counted on May 13th (G.R.B.). Autumn passage was quite normal, roosting assemblies counted at Fairburn including *c.* 40,000 on August 25th, *c.* 200,000 on August 30th, *c.* 250,000 on September 3rd, a drop to *c.* 5,000 September 12th to 14th, but a maximum of an estimated 1 million on September 22nd and 23rd, numbers gradually declining thereafter, but with *c.* 80,000 still roosting on September 30th. Large counts at Hornsea were *c.* 3,350 on September 3rd, *c.* 4,300 on September 10th, and *c.* 2,900 on September 30th (G.R.B.). October records were frequent from many localities, with November records from ten localities, the latest one at Sutton-in-Craven (E.Gr.) and one at Winestead (A.R., A.W.) on November 19th, and a very late bird, one at Wilberfoss on December 4th (G.R.B.). An albino bird seen at Armthorpe between August 15th and 28th (T.G. *et al.*).

276. House-Martin (222).—The first were five at Thrybergh (R.F.E.B.) and one at Eccup on April 2nd with only small numbers following until later in the month, and the main passage arriving in early May. Autumn passage was also quite normal. The species predominated in an assembly of 500+ hirundines at Gouthwaite on August 20th; *c.* 900 at Esholt on September 15th (J.R.C.); *c.* 200 were seen at Marley S.F. on September 28th (J.R.C.) and 91 flew south at Hornsea on October 1st (G.R.B.). Records on six other October dates were widely spread, and late birds were one at Hessele on November 8th (G.R.B.), and one at Hornsea Mere on December 23rd (G.R.B.).

277. Sand-Martin (223).—One at Winterset Reservoir on March 18th (J.S.A.) was the first, with 30 at Hornsea Mere on March 26th (G.R.B.) the next, after which numbers increased steadily and normally.

First sign of a roost at Fairburn were *c.* 500 on June 30th, numbers reaching 5,000 on July 13th, 15,000 by August 4th, and 100,000 on August 12th and 25th, 60,000 on September 3rd, 10,000 on September 8th, thereafter a gradual decline to 1,000 on September 23rd, and 100 on September 30th. Peak days at Hornsea Mere were *c.* 2,500 on July 23rd and *c.* 2,950 on August 12th (G.R.B.). Last noted at Spurn on October 8th, with later birds, one at Hornsea on October 21st (G.R.B.); *c.* 17 at Ripley on October 20th (M.R.S.); three at Ilkley on October 29th (K.H.).

279. Raven (1).—In the north-west one nest had two eggs on February 22nd and five eggs by February 26th, and reared four young; a second nest was robbed. Eight had left a cliff in another locality by early February. Birds were seen in Upper Nidderdale and one flew over Ilton Moor on April 14th (P.Y.), both non-breeding areas.

280. Carrion Crow (3).—Return migration at Spurn is indicated by 37 passing south at intervals on April 6th. Ten seen at Almholme on September 23rd, with 14 on October 21st (R.J.R.).

281. Hooded Crow (2).—The large influx of autumn 1960 spread out and spring 1961 records include numerous small parties from many localities along the coast, largest flocks being 15 at Redcar during January and February (D.R.S.); up to 20 at Filey Brigg in January (R.H.A.); 17 at Sewerby on February 12th (G.R.B.). At Winstead *c.* 70 on February 21st fell to *c.* ten on March 10th, but with 13 still present on March 31st. Thereafter one or two were seen on several dates until May 13th when two adults with three brownish young were present, indicating breeding, but whether by a pair of Hooded Crows or a Hooded/Carrion Crow is not known. The young birds were seen on occasions to June 22nd (A.C.). Autumn records were very few—at Spurn one on November 15th, 16th and 23rd, with two on November 25th; three at Atwick on September 30th, with two on October 28th (G.R.B.); two at Flamborough on November 12th (G.R.B.); one at Bentley Toll Bar on November 19th (R.D.M.); one at Patrington Haven on November 25th (A.A.); one at Filey Brigg on December 2nd (R.H.A.); and one at Winstead on December 30th (A.C.).

284/286. Magpie and Jay (112/96).—Both species occur commonly near some large towns where no game are preserved, whence they spread to other areas.

288 Great-Tit (98).—Actual records of birds arriving off the sea—three at Atwick on September 30th (G.R.B.), and two at Redcar on October 1st (D.R.S.).

289. Blue-Tit (100).—Numbers visiting a single garden can be surprisingly high. In March 89 unringed birds and 13 re-traps were caught at Masham, the retraps being ringed, one in 1955, one in 1956, two in 1957, one in 1958, three in 1959 and five in 1960 (R.C.).

290. Coal-Tit (102).—At Spurn, three on September 21st, up to four on nine days to October 16th, one on November 1st, two on November 12th. Two came in off the sea at Atwick on September 29th (G.R.B.).

292. Marsh-Tit (107).—Two at Rockley Dam, near Barnsley, on February 5th, were first seen for eight years (T.M.C., C.B.).

293. Willow-Tit (108).—One trapped at Spurn on June 24th. Two at Esholt from January to early April (D.A.S., J.R.C.). One at Ingbirchworth in September and early October (C.E.A., J.C.S.E.). Two at Carlton, near Leeds, on December 24th (D.B.I.). Has become a regular autumn species at Redcar—one was seen from August 27th to October 8th (D.R.S.). Recorded from at least eight other localities.

294. Long-tailed Tit (110/111).—Recorded in various widely distributed areas in good numbers. The larger parties recorded include ten at Potteric Carr on May 20th (H.E.S.); 12 at Scaba Wood on May 23rd (J.B.H.); 17 at Fairburn on September 12th; 20 at Chevet on October 14th (A.F.); 14 at Ossett Spa S.F. on October 21st (A.F.); 17 at Hooton Roberts on November 5th (J.B.H., A.E.H.); 10-15 at Birstall on December 10th (J.A.). Nine passed through a moorland garden at Ilton on November 19th (P.Y.). Passage was indicated by records at Spurn—up to three occurred on five days from March 3rd to 15th, and on four days in October. Eleven came in from the sea at Atwick on September 30th (G.R.B.).

295. Bearded Tit (112).—Up to four in one locality on several dates.

296. Nuthatch (96).—Occurred in all its usual haunts with further reports that the species appears to be increasing. At least two pairs in Mill Gill, Askrigg (D.H.); bred at Sandall Beat, Doncaster (D.K.); a pair visited a bird table at Hackness regularly but nesting was not proved this year (A.J.W.). A pair near Ripon was still carrying food to young in the nest on September 18th (M.D.). One

at Hornsea on August 31st is a most unexpected and interesting record (L.S.). Records also received from eight other localities.

298. Tree-Creeper (93/94).—Occurred twice at Spurn, single birds on July 23rd and August 18th. Two at Fairburn on December 16th were unusual. One at South Gare on October 22nd (B.F.).

299. Wren (213).—Seen almost every day at Spurr. Six young were reared in the Point area, breeding being proved for the first time (P.J.M.). Numbers built up in late September, but maxima were 20 on October 15th and November 19th.

300. Dipper (218).—One at Fairburn on May 13th was unusual.

301. Mistle-Thrush (174).—Small numbers recorded along the coast during later half of September and October; maxima 11 at Flamborough on September 10th (A.F.G.W.), five at Redcar on October 8th and 14th (D.R.S.), five at Spurn on October 27th and 28th. Near Redmires on February 2nd, *c.* 35 passed west (T.M.C.). A flock of 26 at Thybergh on July 16th (J.B.H., C.I.B.) and *c.* 30 at Eccup in August and early September.

302. Fieldfare (173).—Large flocks in early months include *c.* 660 at Eccup on January 22, *c.* 400 near Harrogate in late February, *c.* 1,000 at Burstwick on March 21st (A.C.), and heavy concentrations around Darlington throughout January, February and March (V.F.B.). Passage north—850 at Malham on March 16th, *c.* 600 near Middlesmoor on March 17th (D.S.), *c.* 900 on Rombalds Moor on March 21st (D.A.S.). Last were Spurn on May 7th, and an exceptionally late bird at Muston, near Filey, on May 31st (R.H.A.).

Single birds at Spurn on August 11th and 19th were unusual, and preceded the autumn passage which reached its peak in late October and early November. Numbers were reported from all areas as being less numerous—the shortage of berries may have discouraged birds from lingering. (See table below.)

303. Song Thrush (175/7).—A completed nest at Wath on March 12th (A.S.); nest with four eggs at Hexthorpe on March 21st (R.J.R.); and nest with four eggs on March 23rd at Sandall Beat had hatched by March 30th (R.D.M.).

Autumn influxes began along the coast and inland in late September. Peaks at Spurn, 80 on October 4th, 130 on October 7th were exceeded by 300 at Filey Brigg on October 7th and *c.* 150 on October 8th (R.H.A.). At Atwick *c.* 150 came in from the sea late on October 7th (G.R.B.).

304. Redwing (178/9).—About 1,000 roosted at Esholt during January and February (D.A.S., J.R.C.). At Eccup *c.* 350 on February 27th, and up to 200 in first week of March. One at Harrogate S.F. on April 9th, a few at Hampsthwaite on April 10th (W.C.W., P.J.C.) and one at Spurn on April 12th were the last.

One at Spurn on September 24th and two at Filey Brigg on September 30th (J.C.P.) were the first of autumn, passage building up to an extensive movement which covered most of the county from October 17th to 19th. Numbers remained high during November and December, with fresh birds arriving, 61 coming in from the sea at Flamborough as late as December 26th (G.R.B.), and 1,000 present at Spurn on December 29th. The roost at Esholt reached *c.* 1,200 in November and December.

307. Ring-Ousel (182).—The first reached Skell Gill and Dallowgill on March 11th (M.R.S., A.F.G.W.); Spurn and Cold Edge Dams on March 16th (D.A.S., J.C.P.). Ten at Spurn on April 7th, with up to three on 12 days thereafter to May 22nd. A flock of at least 15 at Roseberry Topping on April 10th (D.G.B.). Nested in usual haunts, including Castleton (J.L.), and near Blakey Topping (A.J.W.). Two appeared at Spurn on September 19th and single birds on eight days to October 28th, with two on October 14th and six on October 20th. Single birds at Atwick on September 30th (G.R.B.), Flamborough on October 8th and November 1st (H.O.B., P.R.E.), Hornsea on October 21st and two on October 22nd (G.R.B.).

On May 27th a pair seen collecting and feeding dried grass to the young near Tan Hill (V.F.B.).

308. Blackbird (184).—Early to mid-March showed clear signs of return passage at Spurn, and numbers rose again on April 11th, whilst the drop to two or three birds present did not come until June 3rd.

Autumn passage began with small numbers in the later part of September all along the coast, some moving inland to give a notable increase in Melton Wood, near Sprotborough, on September 24th (J.B.H., A.E.H.). On October 7th influxes occurred at Redcar, Filey Brigg, Flamborough, Atwick and Spurn, and the species was numerous at Flamborough and Atwick the following day (A.F.G.W., G.R.B.),

when another increase was noted in Melton Wood. At Spurn 1,000 were recorded on October 20th, but it was not until two days later that the species was in very large numbers at Flamborough (A.F.G.W.), and at Redcar D. R. Seaward described the influx as the largest he had ever seen with this description: 'During the first part of the morning, which was grey but with high cloud cover, birds were passing over very high as occasionally a flock of mixed thrush sp. would drop into the fox covert. About 11.00 B.S.T. the cloud lowered and rain started. In the next hour c. 800 Blackbirds came in off the sea on the, perhaps, mile front which I could watch. This continued for another hour and then decreased as the weather improved.' Numbers fell again, with very few at Flamborough on October 29th (A.F.G.W.).

Then on November 5th came the tremendous influx. On October 20th, 232 were ringed at Spurn, but on November 5th 647 were caught which were analysed as 118 adult males, 223 adult females, 146 first-winter males, 126 first-winter females, and four unaged females (P.J.M.). With all traps being worked no one could get a complete picture of the size of the movement, but revised figures give 15,000 to 19,000 minimal to cover the Blackbirds that came and/or passed (J.C.). Three birds from this 'invasion', recovered in January 1962, were in Wiltshire, Galway and Mayo. When further recoveries can be analysed they will give interesting comparison with those that followed the ringings of November 1954—the previous big 'invasion' which was only half the scale of this year's experience.

Also on November 5th c. 3,000 came in between Hornsea and Atwick (G.R.B.), but as with the earlier influx it was not until the following day that the heavy numbers were recorded at Redcar. On November 6th birds arrived from dawn until well into the afternoon (D.R.S.).

Following this invasion numbers spread out and records of 'very numerous' and 'big increases' were received from the Wolds generally until November 26th (H.O.B.); Armthorpe on November 12th (T.G. *et al.*); Harlington Flash on December 3rd and 10th (J.B.H., A.E.H.); Eccup on November 18th and 26th.

A nest at Staithes had two young c. nine days old by March 29th (D.G.B.). A bird caught at Masham on March 28th was in its eighth year (R.C.).

PEAK DAYS OF TURDIDAE IN AUTUMN AT SPURN

	Fieldfare	Song Thrush	Redwing	Ring Ousel	Blackbird
Oct. 4th	1	80	1	—	200
" 7th	3	130	7	—	160
" 14th	1	20	140	2	30
" 19th	58	20	200	—	30
" 20th	✓	✓	✓	6	1,000
" 30th	200	20	500	—	150
Nov. 5th	570	10	264	—	c. 18,000
" 26th	650	3	few	—	20
Dec. 29th	600	10	1,000	—	20

311. Wheatear (186).—A male near Hampsthwaite on March 13th (P.J.C.) was the first, with two at Spurn and four males at Fly Flatts Reservoir (D.A.S, J.C.P.) on March 16th the next. Recorded from at least 15 other localities between then and the end of the month, with c. 50 on the Humber Bank between Welwick and Kilnsea on March 26th (A.C.) the largest number. Autumn passage showed no large numbers, and peaks were normal in late August and September, with smaller numbers and single birds throughout October.

317. Stonechat (198).—Scattered records, mainly single birds and mainly males from up to 28 localities, but still no evidence of breeding. Fewer records for January to March than in the autumn from October onwards. Autumn maxima at Spurn, seven on October 14th, six of October 27th and five on November 3rd. A pair was at Scaling Dam on October 29th and also on November 18th (D.G.B.).

318. Whinchat (197).—The first at Winterset Reservoir on April 23rd (J.S.A.) was nine days later than the first in 1960. Thereafter arrival was normal. Continued to increase as a breeding species in the Scarborough area (A.J.W.). A male at Spurn on June 24th, and another on July 11th were unusual. Autumn records did not suggest unusual numbers, and October records came from six localities with two at Spurn on October 16th, the last. Eight together at Winterset Reservoir on September 24th (Ackworth N.H.S.).

320. Redstart (201).—An early bird was seen at Eccup on April 4th, followed by two birds at Spurn on April 7th, one daily to the end of April; one at

Bretton Park on April 9th (E.G., J.E.D.), with normal spread thereafter. At least four pairs bred at Hatfield Moor, the first in recent years (R.J.R.). No records suggest unusual autumn numbers (*c.* 30 on September 19th maximum at Spurn), and the last was at Sheffield as late as October 28th (D.B.C.).

321. Black Redstart (202).—Again the main records come from East Riding coastal areas. At Spurn up to two from March 5th to March 23rd, and up to four from April 10th to April 26th, with one on May 16th. Up to two again from October 7th to 28th, and singles on November 12th and 19th. Spring records elsewhere, one at Atwick on March 31st (G.R.B.) and one at Filey Brigg on April 29th (R.H.A., E.J.W.). Between October 7th and December 9th singles at Hornsea, Atwick, Flamborough and Filey Brigg on seven dates, three at Filey Brigg on October 7th (R.H.A.) and two at Atwick on November 5th (G.R.B.). In the North Riding two at South Gare on November 2nd (G.T.), with inland records—a female at Grosmont on July 23rd (D.G.B.) and a male at Guisborough on October 15th (D.S.S.).

322. Nightingale (203).—At Spurn one sang and was caught on April 14th. Another caught on April 29th at 08.45 hrs. and recaptured at 20.15 hrs. had increased in weight by 1.6 grammes in the interval (P.J.M.). One was heard singing at Conisborough on May 1st (J.B.H. *et al.*), and four pairs were present near Doncaster, at least two breeding successfully (D.K., C.J.B.).

325. Robin (207/8).—On April 18th a Robin was found at Farndale brooding eggs laid in the previous year's nest of a Long-tailed Tit (L.P.H.).

327. Grasshopper-Warbler (145).—Fewer records than in 1960. At Ben Rhydding S.F. on April 9th was the first (L.G.D.). Occurred at Fairburn on April 23rd, and during July and August. Spurn only recorded one on May 6th and 7th and on June 3rd. All other records of single birds from 12 widely separated localities, with four heard singing in different areas of Hatfield Moor (W.G.D.).

333. Reed-Warbler (149).—One at Potteric Carr on April 22nd (H.E.S.), and at Fairburn the same day were the first. Reached Hornsea Mere (G.R.B.) and Cusworth (W.G.D.) on April 29th. Recorded at Spurn on six dates between May 12th and July 27th, with two caught on October 7th. At Fairburn *c.* 30 pairs were estimated to breed, while at Scarborough Mere the only nest found was robbed (A.J.W.).

337. Sedge-Warbler (153).—First recorded at Winterset Reservoir on April 8th (J.A.B.), Hornsea on April 12th (G.R.B.) and Fairburn on April 13th. Noted practically daily at Spurn from April 21st to September 12th. No marked autumn passage and the last was one at Hornsea Mere on October 21st (G.R.B.).

340. Icterine Warbler (155).—One was seen daily at Spurn Point from September 2nd to 6th, and detailed descriptions were taken (D.G.B. *et al.*).

343. Blackcap (162).—No 'wintering' records, the first a female at Sandall Beat on April 3rd, after which spread in was normal. Late birds occurred on eight days in November at Spurn (five on November 12th and four on November 19th); one at Gouthwaite on November 4th (A.F.G.W.); one at Hull on November 19th (B.S.P.); a first-winter male trapped at Sheffield on December 30th with snow falling (D.B.C.). Very much outnumbered by Garden-Warblers this year in Scaba Wood, Sprotborough (J.B.H., A.E.H.).

344. Barred Warbler (159).—Two trapped at Spurn, one on September 4th, the other on October 29th were both birds of the year.

346. Garden-Warbler (161).—A single bird at Spurn on April 14th was the first, followed there by singles on May 22nd and June 2nd all of the spring. Reached Hornby Park on April 20th (G.R.P.) and Hatfield Moor (J.B.H., A.E.H.) and Grantley (M.R.S.) on April 22nd. Numbers at Sandall Beat, Doncaster, greatly increased in 1961, and were about same as Blackcap (*cf.* that species). Ten on September 4th was maximum of autumn passage at Spurn, and later birds were one at Filey Brigg on October 7th (P.R.E.), and at Redcar on October 20th (D.R.S.).

347. Whitethroat (163).—First noted, one at Spurn on April 6th, followed by one at Welton on April 8th (E.H.W.). No more until April 15th at Knaresborough S.F., after which the spread was general. Residents at Spurn numbered *c.* 30 and peak of autumn was *c.* 60 on August 31st; the last, one on September 25th, only a day later than the last inland—one at Ampleforth (C.J.W.) and at Rockley (A.A.) on September 24th. Evidence of movement was seen at Adwick-le-Street on July 9th and July 30th when, with other warblers, the species was very numerous in the early morning, moving on by 08.00 hours. (R.J.R.).

348. Lesser Whitethroat (164).—At Spurn occurred from April 16th (one)

on some days to May 28th (maximum two). Other April records—Welton Water (B.S.P.) and Worsborough Reservoir (D.J.S., G.R.A.), both on April 30th. One heard singing at Masham on May 31st was seen and heard occasionally through June (R.C.). More numerous at Fairburn than in any previous year since records have been kept—regular in June and July, with three on July 22nd. Otherwise records are of single birds from 13 widely separated localities.

354. Willow-Warbler (132).—The first were two at Hornsea Mere on March 31st (G.R.B.), next Sedbergh on April 1st, and thereafter each day had the 'first' record for a different area, with *c.* 25 at Sandall Beat on April 7th (D.K., C.J.B.) and birds arriving in force by April 11th. Heaviest arrival at Spurn was on May 6th. Passage was light in the autumn, with no marked numbers recorded. A warbler at Knaresborough S.F. on October 21st seen at three yards range, was considered to be Willow-Warbler (J.R.M.), as was one seen the same day at Redcar (D.R.S.).

356. Chiffchaff (129).—Recorded at Spurn on March 16th, 18th, 20th and 23rd; Harrogate on March 18th (P.J.C.); Fairburn and Sandall Beat (three) (D.K., C.J.B.) on March 19th; Eccup on March 20th; Esholt S.W. on March 21st (D.A.S., J.R.C.); Hornsea, Ripley and Harewood by March 26th; Hornby Park (six) on March 27th (G.R.P.); and Worsborough Reservoir on March 29th (A.A.). At Spurn, one on July 29th, one on August 31st, up to two on five days in September and one on October 9th were all of autumn except for birds not identified on October 21st and November 12th but practically certain to be Chiffchaffs. Other late birds—one sang on top of the trap at Knaresborough S.F. on October 8th (J.R.M., N.C.); one sang at Worsborough Reservoir on October 22nd (D.J.S.) and a 'phylloscopus' seen nearby on November 12th may have been the same bird (C.B.).

357. Wood-Warbler (135).—Very few records. At Spurn singles on April 28th, May 1st, May 12th and August 1st were all recorded. One near Grantley on April 23rd was the first (M.R.S.). Nesting was proved near Sedbergh (Sedbergh S.S.).

360. Yellow-browed Warbler (137).—One caught at Spurn on October 5th. One seen on cliffs south of Whitby on October 28th (J.C.).

364. Goldcrest (126/7).—Occurred in spring at Spurn from March 5th to March 26th (eight on March 16th and 17th) and from April 1st to 21st (eight on April 7th). Noted at Redcar on March 4th and 12th (three on March 12th) (D.R.S.). Re-appeared at Spurn on July 24th, with small numbers to the peak from October 7th to 14th (*c.* 150 on October 7th), and from November 11th to 17th (*c.* 30 on November 12th). These dates compare in some instances and not in others with larger numbers seen farther north. At Filey Brigg 100+ on October 7th (R.H.A.) compares, and birds were numerous at Redcar (50+) on October 20th (D.R.S.), and at Flamborough on October 22nd (H.O.B.). Three were at Atwick on November 11th, and three came in from the sea the following day (G.R.B.). Seven near Linton Falls, Wharfedale, on October 10th were unusual and presumably winter visitors (S.D.B.), and one was seen in a small privet bush in Rising Street, Sheffield, on October 18th, a completely built-up area, well within the city (R.G.H.).

365. Firecrest (128).—One was caught at Spurn on April 9th.

366. Spotted Flycatcher (121).—At Spurn occurred on most days from May 5th to 26th (five on May 24th), and on four days to two on June 11th. First at Eccup and Ben Rhydding was on May 6th; Esholt on May 8th (J.R.C.) and Wentbridge on May 10th (Ackworth School N.H.S.). No evidence of marked autumn movements and at Spurn was seen on 27 days from August 19th with ten on September 18th. Single birds at Filey Brigg on September 6th (R.H.A.) and at Flamborough on three dates in September. One at Redcar on October 1st was seen picking at hawthorn berries (D.R.S.).

368. Pied Flycatcher (123).—Two males at Bolton Abbey on April 19th (M.C.H.) were the first reported. Only single birds in spring at Spurn on ten days between April 30th and June 2nd. Seen feeding young in Garsdale (J.R.H.) and a nest found near Sedbergh (Sedbergh S.S.). Two pairs used nesting boxes at Ripley (M.R.S.). Up to 14 birds seen in Helmsley area on May 25th (P.R.E.). Autumn passage was remarkably poor, very few at Redcar, and daily maximum at Flamborough *c.* 13 on September 9th (A.F.G.W.), fewer on four other dates. Six at Bampton on September 2nd (H.O.B.), one at Rockley on September 17th (D.J.S.). Maximum passage at Spurn was from August 28th to September 6th, with *c.* 50 on September 2nd, and up to 40 on several days. On September 19th *c.* 30, and October birds on three dates, the last on October 12th.

370. Red-breasted Flycatcher (125).—Single birds noted at Spurn on

September 4th and 18th; four on October 7th; two on October 8th; one on October 9th and 11th. One at Flamborough on September 19th (A.J.Ws.). One at Acklam Woods on October 11th (P.H.).

371. Hedge-Sparrow (210/11).—Normal population at Spurn was augmented on August 29th (est. of *c.* 100 present), and on several days following; and augmented again on September 23rd (68) and October 8th (*c.* 80). Comparative dates for similar influxes for Redcar—August 31st, September 1st, 9th, 10th, 17th and 25th, October 3rd (D.R.S.); and Flamborough—September 2nd, 3rd, 9th and 10th, October 8th, numbers being striking particularly on middle three dates (H.O.B., A.F.G.W.). Twelve at Filey Brigg on October 7th and 8th were unusual (R.H.A.).

373. Meadow Pipit (76).—Return to the moors was about normal, but some very heavy spring movements were recorded. At Redcar small numbers first passed on March 3rd, gradually building up until on March 31st 1,387 passed in 105 minutes: movement beginning before 06.25 hrs. with birds still passing at 19.30 hrs., so that several thousand birds were involved (D.R.S.). Also March 31st a steady movement passed over Bentley Common and Alholme from 09.00 hrs. to 15.00 hrs. (R.J.R.), and between Sandal and Winterset Reservoir *c.* 1,000 were seen (J.A.B.); it was one of the peak days for spring movement at Spurn. This movement continued, to a lesser degree, into first week of April, and on April 4th during a blizzard and strong south-east wind, an incredibly heavy weather movement took place down Nidderdale; *c.* 500 at Beverley in 15 minutes (A.S.), while at same time not less than 300 per hour passed over Pateley Bridge in an unbroken stream (D.S.).

Autumn passage was noted as being more protracted than usual, with over 100 still at 1,000 ft. on Middlesmoor on October 8th (D.S.), and odd birds on Ilton Moor up to November 21st (P.Y.). The peak day for autumn passage was September 17th, when 300+ passed Staithes in 90 minutes (D.R.S.); small parties came in from the sea at Flamborough (H.O.B.); 4,200 passed south at Atwick (G.R.B.); and *c.* 6,000 passed at Spurn. That date was a peak day inland at Eccup with 250+, while during the two days following marked movement was seen near Harrogate (C. Worin, A.F.G.W.). Later, October 8th, was also a day of marked movement, with increase in numbers at Redcar (D.R.S.); passage at Filey Brigg (R.H.A.); very numerous at Flamborough (H.O.B.); 1,300 passing Atwick (G.R.B.); with *c.* 1,200 at Spurn on October 9th. Small parties were passing over Sheffield on October 8th (R.G.H., D.B.C.). At Harrogate S.F. *c.* 35 on December 26th increased to *c.* 60, in cold spell, by December 31st (W.C.W.).

374. Richard's Pipit (73).—One at Spurn remained from October 21st to November 1st (J.C., P.J.M. *et al.*), and became an 'exhibit' to Spurn visitors.

376. Tree Pipit (75).—First records—Ripley on April 6th (P.J.C.); Spurn, April 7th, and on most days to May 22nd; two at Sandall Beat on April 9th (D.K.). Re-appeared at Spurn on July 16th (one), and on most days to October 12th (two). Several at Flamborough on October 8th (A.F.G.W.). Ten flew north-east over Hatfield Moor on August 20th (R.J.R.).

379. Rock/Water-Pipit (81).—Coastal records were normal. Inland at Fairburn, singles on February 26th and March 4th, with up to two on eight dates in autumn. Two at Adwick-le-Street S.W. on November 11th (R.J.R., W.G.D.). Two Water-Pipits at Spurn on March 19th were seen at ranges down to five yards (R.F.D., D.J.M., J.A.D.C.).

380. Pied/White Wagtail (90/91).—Spring passage at Spurn—a few on many days, frequently in March to April, with 'Whites' identified on eight days, never more than two. Inland passage of 'Whites' earlier than usual. At Knaresborough S.F., five on March 25th, with up to two on three later dates (J.R.M.); at Fairburn up to two on seven dates between April 6th and May 25th; one at Eccup on March 24th; at Gouthwaite one on May 3rd (A.F.G.W.); Barnoldswick S.F., one on April 9th (A.P.); five at Winterset Reservoir on April 15th (J.S.A.); and one at Woodhouse Mill on April 22nd (R.G.H.). Autumn roost at Fairburn reached 250 'albas' on September 18th, and *c.* 100 flew over Knaresborough S.F. to roost on October 7th (J.R.M.). The roost at Denaby Ings had majority 'Pied' on June 25th (*c.* 200), 50/50 Pied/Yellow on July 9th, with majority 'Yellow' thereafter to September 8th (J.B.H. *et al.*).

381. Grey Wagtail (89).—At Spurn seen on two days in March, on April 8th, May 7th (two); and up to six fairly regularly from August 26th to October 21st, with ten on September 20th. Singles or up to two passing at Redcar on four days in March and on six days in September and up to October 8th (D.R.S.).

382. Yellow Wagtail (88).—The first a male at Fairburn on April 6th, with records from usual localities arriving daily thereafter, although arrival was protracted with no large assemblies at inland sewage farms, with the species not at full strength at Gouthwaite on April 30th. At Fairburn *c.* 50 on April 28th. Autumn roost at Fairburn reached peak of 300+ on August 26th, while at Gouthwaite roost of *c.* 100 on July 29th dispersed in early August when a Short-eared Owl hunted each evening over pre-roost assembly area (A.F.G.W.). October birds at Knaresborough S.F., Gouthwaite, Fairburn, near Almholme, Hornsea Mere, with a single bird on October 28th, at Spurn, the last.

383. Waxwing (120).—No big invasion. Part of the flock in Albert Park, Middlesbrough, in November and December, 1960, stayed until March 3rd, 1961 (V.F.B.). Seven seen at Drighlington on February 6th (D.A.R.). During November and December, 1961, small parties were seen in 16 different localities, mainly along the coast, but inland as far west as Sheffield, Huddersfield and Glasshouses. Largest flocks were in the Middlesbrough area, and 16 at North Ferriby on November 29th (G.R.B.). Up to three occurred at Spurn from November 6th.

384. Great Grey Shrike (114).—In early months, singles occurred at 13 widely separated localities, with birds on seven dates at Fairburn up to April 23rd the last. Fewer in the autumn, again all single birds—October 7th at Filey Brigg (P.R.E.) the earliest; at Spurn on 23rd October, November 6th and 7th; Temple Newsam on October 22nd (H.M.R.); Gouthwaite on December 31st; Fairburn on November 19th.

385. Lesser Grey Shrike (113).—One, first seen on July 7th at Eastfield, near Scarborough, maintained a well defined territory and was seen regularly until August 17th (R.H.A. *et al.*).

386. Woodchat Shrike (116).—One at Spurn on May 31st (P.J.M.).

388. Red-backed Shrike (119).—Two records—one at Flamborough on September 9th and 10th (A.F.G.W., D.S.); one at Spurn on September 9th.

389. Starling (14).—At Spurn *c.* 6,500 were present or passed on November 5th (Blackbird day), but the species did not figure as prominently as in some years. The same date at Hornsea, *c.* 1,000 came in from the sea, and *c.* 2,500 passed north (G.R.B.). Huge flocks were also seen at Redcar, where *c.* 9,800 flew north-west and west (D.R.S.). Very large gatherings for roosting occurred as usual—a roost near Rudston was used nightly by birds from a very extensive area and must have totalled about a million birds (A.J.W.). A pair at Grassington were feeding young on November 20th (S.D.B.).

391. Hawfinch (18).—Breeding was not proved at Sandall Beat in 1961 (D.K., C.J.B.), but a family party was seen at Bolton Abbey on July 5th (J.E.B.). A juvenile found dead at Conisborough on June 5th (J.B.H., J.S.G.) and another caught at Adwick-le-Street on June 20th (R.J.R.), are also evidence of breeding. More frequent in south of county, with records from seven other localities, including 11 roosting near Rockley Dam on December 19th (A.A.). Six seen in Hornby Park on January 14th (G.R.P.).

392. Greenfinch (19).—Large flocks were seen at Spurn in January; spring maxima on April 6th (*c.* 650); but autumn flocks not large until October (*c.* 600 on October 11th), and *c.* 800 was November maximum, with considerable numbers present in December. A flock of over 1,000 at Airedale S.W. on September 17th (C.W.); *c.* 550 at West Moor, Armthorpe, during November and December (R.J.R., T.G.); *c.* 400 at Ossett on December 24th (A.F.), were other large congregations recorded.

393. Goldfinch (20).—Reports supporting the obvious increase in this species are numerous, and come from widely separated localities. Records of large flocks include, as examples, *c.* 50 at Bentley Tilts on September 17 (R.D.M.), and Doncaster Airport on September 30th (H.E.S.); 70+ near Mother Drain, Doncaster, on September 30th (H.E.S.); *c.* 150 near Rossington on October 14th, numbers having built up over six weeks, to disperse quickly into smaller parties (per R.F.E.B.); 100+ at Farnham on December 10th (P.J.C.).

Spring passage at Spurn began in numbers with *c.* 50 on April 12th, with maximum of *c.* 110 on April 22nd during which period evidence of movement was recorded at Atwick (34 on April 22nd) (B.R.). A few began to appear at Spurn in mid-September, *c.* 100 on October 11th was first sizeable movement, with November peaks of 146 on November 25th and 143 on November 26th. At Filey Brigg during September numbers increased from 30 on September 6th to 80 on September 20th (R.H.A.),

and movement was noted at Flamborough and Atwick during October; with the species very numerous on the Wolds in general on November 19th and 26th (H.O.B.).

394. Siskin (21).—In the first part of the year main flocks were *c.* 40 at Oakdale, Harrogate, on January 2nd (P.J.C.); 60 at Riffa on January 5th (H.M.); *c.* 60 in Forge Valley, near Scarborough, on January 7th (M.H.N.); with several flocks of up to 30 in other localities. Very numerous in the autumn, and was recorded in larger flocks, and from a wider range of localities than usual, making details of all records impossible. Four at Eccup on September 13th were the first recorded, and from early October to the year end records are continuous. The larger flocks were 100 at Ripley on October 29th (P.J.C.); *c.* 100 in Gouthwaite/Wath area November 19th and 26th (A.F.G.W.); in Rockley Valley *c.* 30 on October 1st fluctuated throughout rest of year, with *c.* 100 on October 22nd the peak (D.J.S. *et al.*); *c.* 75 in three flocks between Bingley and Shipley on October 19th (D.A.S.); 50+ at Oakdale, Harrogate, on November 3rd (P.J.C.); *c.* 50 at Harewood Bridge on December 27th (A.G.); *c.* 40 at Ilton on October 10th (P.Y.), and with many flocks of up to 20 elsewhere, though mainly in the west of the county. Up to seven seen on passage on six dates in October at Redcar (D.R.S.), and other passage records come from Flamborough (*c.* 15 on September 19th (A.J.Ws.)), Hornsea (29 on October 8th (G.R.B.)), and Filey Brigg. At Hornsea *c.* 70 still present on December 16th (G.R.B.) could be fresh arrivals. Appeared at Spurn regularly from mid-September (*c.* 20 on September 21st), maximum passage *c.* 120 on October 5th, and continued into November with odd birds later (10 on December 14th).

395. Linnet (30).—At Spurn *c.* 150 on January 5th was only sizeable movement noted until 14th March (*c.* 100). On March 31st, *c.* 360 was followed by large numbers in early April with 2,840 passing on April 3rd, and up to 2,000 on many days to April 22nd. These dates correspond well with dates of movements noted by several observers in the wider Doncaster area and at Redcar. At Gouthwaite three on March 16th were early (P.J.C.), the main return following as usual in April. Movement along the coast began again in early September—200 to 300 passed Filey Brigg on September 9th, 20th and 23rd (R.H.A.); peaks at Spurn were reached with *c.* 1,800 on September 29th, and October 4th, numbers remaining high into early November (how far such high numbers day after day consist of fresh birds of passage, or otherwise, remains problematic); *c.* 1,350 passed Hornsea on October 1st, and 690 on October 8th (G.R.B.). Autumn inland flocks include *c.* 500 roosting at Ossett Spa S.F. by late September, and *c.* 500 at Low Laithes on December 26th (A.F.); *c.* 300 at Eccup in August.

396. Twite (28/29).—Recorded from three moors in the west during June and July. At Spurn one on February 20th only record of spring; one on September 3rd and occurred on 12 dates in October and November, maximum 26 on October 29th. Elsewhere records are *c.* 50 on Welwick Salting on January 15th (A.C.); *c.* 50 Cold Edge Dams on March 16th (D.A.S., J.C.P.); two at Fairburn on April 3rd; *c.* 40 near Huddersfield on September 10th (R.Cr.); *c.* 120 near Denholme Gate on October 5th and October 17th, the flock gradually decreasing to nine by November 23rd (D.A.S., J.C.P.); four on Cherry Cobb Sands on October 23rd (G.R.B.) and two near Ilton on December 27th (P.Y.).

397. Redpoll (23/25).—Records of spring flocks all come from the west of the county—*c.* 100 at Eccup on April 18th; *c.* 70 at Oakdale, Harrogate, on February 14th; *c.* 100 at Pinewoods, Harrogate, on February 15th (P.J.C.); *c.* 50 at Winkley on April 8th (M.R.S.). From the same area recorded as much scarcer generally in the autumn, while in the south of the county recorders refer to a good autumn (cf. siskin), with small numbers in many places; the larger flocks include *c.* 50 at Langsett Reservoir on October 15th (D.J.S.); *c.* 30 at Sandall Beat on October 15th (D.K.); *c.* 20 at Potteric Carr on November 18th (H.E.S.). Autumn passage at Spurn began in September, and counts over 100 were recorded on four dates in October, falling in November, with a few in December (*c.* 20 on December 9th only double figure).

400. Serin (31).—One was caught in the Point trap at Spurn, with two House-Sparrows, on April 13th (P.J.M.), and was a new record for the peninsula: whether it was the same bird that had been recognised 30 minutes earlier is uncertain.

401. Bullfinch (32/3).—Reports of this species being unusually numerous in the autumn come from all parts of the county, with flocks of over 20 a not unusual occurrence. The increase was noted mainly in October to December, but the species has become more common generally also. Flocks of over 20 birds were recorded—

30 at Chevet, Wakefield, on October 8th (A.F.); *c.* 30 at Hesse Quarry on November 24th (W.B.S.); *c.* 25 at Hampsthwaite on December 19th (P.J.C.); 27 at Fairburn on December 29th. At Spurn single birds on two dates in April and six dates in autumn with seven on November 5th (Blackbird day).

404. Crossbill (36).—Only four records. At Eccup, single birds on July 13th and October 22; a party heard at Lockwood Beck on July 14th (W.K.R.); one at Atwick on October 8th (G.R.B.); and three at Leyburn on December 27th (G.E.A.).

407. Chaffinch (40/41).—Spring passage at Spurn took place from March 3rd with maximum of *c.* 150 on March 12th, and only a few in April. In autumn *c.* 30 on October 1st were the first, with peak of *c.* 150 on October 10th and 11th, and small numbers only after early November. The same periods are reflected at Redcar. A strong south-west movement was noted at Almholme on October 21st (R.J.R.), and considerable flocks of migratory birds built up in Garsdale/Dent area in mid-November (Sedbergh S.S.). One sang complete song in Harrogate on September 17th and into October (M.R.S.). Autumn flocks generally scarce—*c.* 200 roosting at Gouthwaite on November 18th (A.F.C.W.); *c.* 150 at Bewerley on November 10th (A.S.).

408. Brambling (42).—A build up in January at Harrogate to 200/300, declining again by end of month (M.R.S.); 40 at Eccup on March 12th was year's maximum; *c.* 30 at Harewood Park on February 19th (K.D.); *c.* 35 at Sandall Beat on February 9th (R.D.M.); *c.* 100 near Bingley on March 7th (D.A.S., J.C.P.); *c.* 50 at High Hoyland on March 12th (E.G.); *c.* 50 at Royds Hall Wood on April 1st (A.D.W.); up to 100 in Acklam Woods in January and February (D.G.B.). There were no large flocks in autumn at Spurn, and *c.* 50 on October 7th was maximum of daily occurrences between September 30th to November 22nd. Recorded as very scarce in the West and East Ridings.

409. Yellow Hammer (44).—A male near Isle of Skye, Holmfirth (1,450 ft. altitude) on June 4th (R.Cr.). At Spurn *c.* 25 on March 31st and April 1st and *c.* 32 on October 21st were spring and autumn maxima.

410. Corn Bunting (43).—Rather fewer breeders at Spurn than in recent years, and scarce in August to October. Movement southward recorded on November 8th (*c.* 50), November 19th (*c.* 30) and December 12th (*c.* 40). A male singing at Knaresborough S.F. on October 29th (J.R.M.). Recorded at Burley Bank, near Hampsthwaite on May 18th and 19th (J.R.M., P.J.C.).

413. Red-headed Bunting (47).—A male at Knaresborough S.F. on September 19th and 20th (J.R.M., C.Wo *et al.*). A possible escape.

416. Ortolan Bunting (50).—A bird, considered to be an immature, at the Point, Spurn, on August 29th (R.F.P., P.J.M. *et al.*). The call was heard from a bird flying north on September 1st (P.J.M.); and the orbital ring seen of one behind Warren Cottage on September 16th (J.C., A.S.), and a similar bird, possibly the same one, on September 21st and 22nd.

421. Reed Bunting (55).—At Spurn the peak of spring came with 44 on March 11th; of autumn with *c.* 100 on September 17th, and on September 24th when 208 passed south and 58 passed north before 10.00 hrs. There was passage on most days in October with maxima of *c.* 180 on October 15th and *c.* 200 on October 29th. These dates correspond with small movements at Redcar (D.R.S.) and at Filey Brigg (R.H.A.). Fifty-three passed south at Atwick on October 8th (G.R.B.) and 170 were counted at Hornsea Mere on November 11th (G.R.B.). The species was very numerous at Almholme on October 21st (R.J.R.). On September 14th *c.* 40 were on the slag at Astley (A.F.).

422. Lapland Bunting (58).—In the early months at Spurn singles on January 1st and 8th, up to three on seven days to March 11th, and singles on April 28th and 29th. At Filey Brigg up to eight from January 1st, with last one on March 11th (R.H.A.). At Redcar up to 12 in early January, decreasing and last seen on February 12th (D.R.S.), where the first returned on September 24th (five), remaining and always present to year end, with maxima 14 on October 8th and 20+ on October 29th (D.R.S.). From Filey southwards an unusual number of records was received from six coastal localities, numbers usually small with 18 at Atwick on October 21st (G.R.B.), and 14 at Filey Brigg on October 28th (R.H.A.) the largest flocks. Singles at Cherry Cob Sands on October 30th and November 18th; three on November 26th and nine on December 2nd (G.R.B.). First at Spurn appeared on September 20th and occurred on many days in small numbers, maximum *c.* 20 on November 8th.

423. Snow Bunting (59).—After *c.* 100 on January 1st and *c.* 120 on January 7th numbers fluctuated at Spurn without reaching these figures again. Similar numbers at Filey Brigg in January (R.H.A.); *c.* 175 at Sunk Island on January 12th (S.M.); and small numbers at Redcar, with last two on March 27th (D.R.S.). Reappeared first at Spurn, one on September 19th and 20th, good numbers in November (*c.* 300 on November 19th), but diminishing towards end of month and in December. Flocks of varying size recorded on many dates from mid-October to year end at about ten East Riding coastal localities with over 100 at Flamborough on October 30th (A.F.G.W.); 111 at Atwick on November 18th, 124 on November 25th and 194 on December 10th (G.R.B.); 213 at Aldborough on November 26th (G.R.B.); *c.* 250 at Patrington Haven on November 25th (A.A.) as examples. Small numbers at Redcar and South Gare in November (D.R.S., D.G.B.). Inland, recorded from nine localities, with *c.* 60 on Slaitwhaite Moor on November 19th and *c.* 25 at Cupwirth Reservoir on December 17th the largest flocks.

424. House-Sparrow (61).—Except in May and September numbers above the Spurn breeding population often recorded—*c.* 800 in January and February, and up to and above 2,000 passing south from October 20th, falling towards year end. Birds from Kilnsea do come foraging, but ringed birds from Roos and Market Weighton (38 miles north-west) evidence longer journeys. One recovered at Grimsby had evidently crossed the Humber. At Fairburn *c.* 2,000 roosted in silver birch on October 7th.

425. Tree-Sparrow (62).—Small parties at Spurn on some days in January to April, with up to 30 after April 13th. At least one pair nested at the Point, and peak passage of autumn from late September into November (*c.* 1,650 on October 26th was maximum). Sizeable flocks inland—*c.* 200 at Esholt S.W. during first three months (D.A.S., J.R.C.); *c.* 150 near Arthington on February 5th (D.A.S.); *c.* 100 Hangthwaite on October 20th (R.J.R.); *c.* 200 at Fairburn on October 29th; *c.* 350 at Armthorpe on November 25th (T.G. *et al.*).

LIST OF CONTRIBUTORS

(with apologies for omissions)

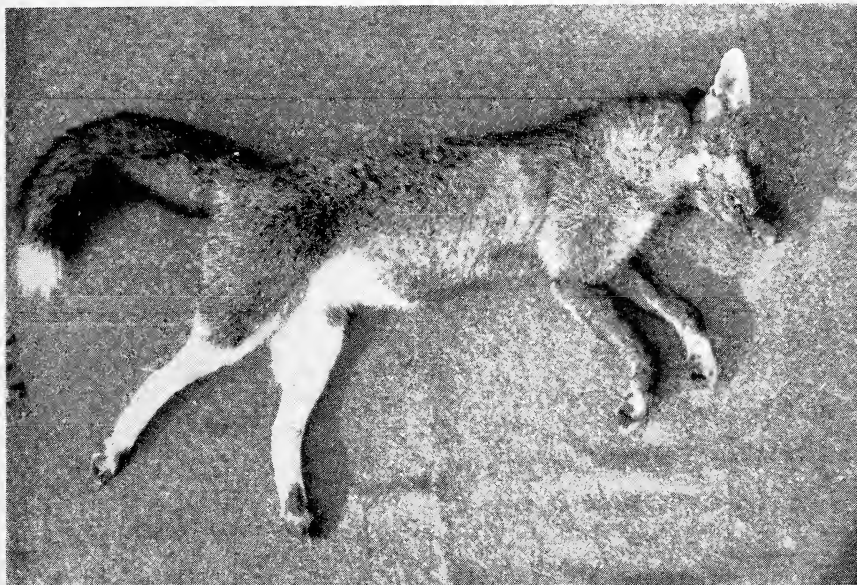
Ackworth School N.H.S., G. H. Ainsworth, G. E. Alderson, M. Allison, C. E. Ardrassy, R. H. Appleby, J. Appleton, A. Archer, B. Armitage, J. Armitage, J. S. Armitage, D. Ashurst, E. W. Aubrook, G. R. Aynsley, K. and A. Baldridge, F. N. Barker, Batley N.S., P. G. R. Barbier, J. E. Beckerlegge, D. G. Bell, G. R. Bennett, G. Bird, T. D. Bisiker, D. J. Blackmore, J. Booker, C. G. Booth, C. Bower, H. W. Bracken, Miss S. D. Brooks, D. and M. Brook-Taylor, V. F. Brown, A. D. Buffey, H. O. Bunce, C. J. Burbanks, J. Burley, C. E. A. Burnham, C. E. Burton, R. F. E. Butler, W. A. Butterfield, G. Carr, L. Carr, R. Chislett, R. F. Clarke, T. M. Clegg, V. S. Crapnell, A. Credland, R. Crossley, J. Cudworth, D. B. Cutts, J. E. Dale, P. Davis, K. Dawson, M. Densley, L. G. Dewdney, R. F. Dickens, C. J. Disbrey, Doncaster O.S., I. and S. Downhill, A. C. M. Duncan, W. G. Dye, J. C. S. Ellis, E. W. Ellis, P. R. Evans, Miss J. Fairhurst, W. F. Fearnley, J. K. and A. E. Fenton, A. Frudd, Miss E. A. W. Gill, A. Gilpin, W. Glencorse, D. A. Goode, A. Gordon, J. R. Govett, Miss A. M. Gowland, E. Grace, E. Greenwood, A. E. and J. B. Hague, Halifax N.S., R. Hardcastle, K. Hardcastle, Miss R. Harricks, Harrogate N.S., R. G. Hawley, J. W. Heddon, C. W. F. Hirst, D. Hodgson, H. Hodgson, P. F. Holmes, R. Holmes, J. R. Horne, D. B. Iles, E. E. Jackson, H. W. Jackson, A. J. James, F. Jefferson, T. Jennison, T. Keeler, T. Kilburn, C. E. King, R. W. N. Knapton, D. Kramer, B. Lavery, J. H. I. Leach, A. H. B. Lee, J. T. Lee, J. C. Leedal, Leeds B. W. Club, J. C. H. Leeson, D. G. Leonard, Miss B. Lonsdale, J. Lord, B. Lucas, L. Magee, D. Mallinson, H. Marjoram, G. K. Martin, S. Martin, J. R. Mather, K. M. Mayall, D. J. Millin, R. D. Mitchell, R. Moat, I. Morley, G. R. Naylor, M. H. Ness, C. Nettleton, R. C. Parkinson, R. T. Parrish, B. S. Pashby, M. Passman, A. Paterson, Mrs. O. M. Pennock, J. C. Petyt, J. D. Pickup, A. Pilkington, A. F. Platt, R. S. Pollard, G. R. Potts, P. C. Quin, J. Raddings, M. N. Rankin, P. A. Rayfield, G. Reynolds, R. J. Rhodes, B. Richards, Miss C. M. Rob, H. P. K. Robinson, W. K. Robinson, R. W. Robson, T. B. Rogers, D. A. Rushforth, Miss M. R. Sanderson, D. A. Scott, H. E. Scott, D. R. and P. Seaward, Sedbergh S.S., K. Senior, R. P. Simms, E. S. Skinner, C. R. Shoesmith, L. Smith, R. Smith, D. J. Standing, P. J. Stead, E. C. Sterne, K. M. Stephenson, I. F. Stewart, A. Summersgill, D. Summers-Smith, E. C. J. Swabey, P. Swallow, D. Swindells, A. N. Sykes, E. W. Taylor, L. Taylor, M. K. Taylor, J. Temple, J. S. Trimmingham, T. R. Tyson, J. P.

Utley, A. Vaughan, D. Vaughan, A. and A. J. Vittery, C. H. and S. Voase, W. C. Wakefield, Wakefield N.S., A. B. Walker, A. F. G. Walker, Miss D. Walker, D. F. Walker, J. E. S. Walker, A. J. Wallis, G. Wallis, W. C. Walton, Miss C. A. Ward, N. Watmough, M. Wear, C. Webb, S. J. Wells, Wharfedale N.S., O. S. White, R. Wilby, F. Wilcocks, C. Winn, G. R. Wilkinson, A. J. Williams, C. Williamson, D. R. Wilson, E. J. Wise, T. W. A. Wood, P. B. Wordsworth, R. F. Wormald, C. Worrin, A. D. Wright, D. Wright, Miss M. Wray, P. Young, and many others who visited Spurn Bird Observatory.

AN UNUSUAL MUTANT FOX

DAVID L. HARRISON

THE photographic plate shows a large dog fox (*Vulpes vulpes crucigera* Bechstein) which was killed near Brasted, Kent, on December 13th, 1961, and which was sent



to the author for study on account of its very unusual colouring. The animal measured 43 inches in total length, the tail 16 inches, the hind foot 5.85 inches.

Millais (in *The Mammals of Great Britain and Northern Ireland*, I, 201, 1904) noted that British foxes present two well-marked forms, a dark and a light type. He remarked that both pied and melanistic individuals have occurred, while a pure white fox has been killed.

The pelt of this specimen, now in the author's collection, reveals an interesting combination of melanistic and leucistic traits, with a marked pattern formation on the limbs. The general colour of the back is dark rufous brown mid-dorsally, with a distinct grizzled greyish hue predominating on the rump, flanks and upper outer thighs. The back is more brown anteriorly, with a decided admixture of black on the shoulders and nape of the neck. The throat, lower chest and upper abdomen are entirely smoky black, changing sharply to pure white on the upper chest and the lower abdomen. The abdominal white area extends not merely on to the inner aspect of the hind legs as is usual, but also on to the outer legs as far as the foot and with a sharply defined margin on the outer part of the lower thigh, aptly described to me as 'a fox with white trousers' (see Plate). A small blackish-brown area, with some white hairs admixed is present on the dorsal aspect of each hind foot distally. The forelimbs are dark and almost pure black on their extensor aspects,

but in each case a prominent white bar is present crossing the dorsal aspect of the metacarpus, better defined on the left forepaw than on the right.

The possible significance of such mutations has not always been realised in the past and such individuals seem worthy of more detailed study since they may display characteristics resembling distant geographical forms or even other species. In the present case it is well to remember that *V. vulpes* is a species exhibiting much individual variation throughout its range, but it is noteworthy that a similar white pattern of the hind foot occurs frequently in the form *V. vulpes pusilla* Blyth, which occurs from N.W. India, through Baluchistan and Persia to Iraq. One of the synonyms of this form, *V. leucopus* Blyth, was clearly named on account of this feature. Zoologists have too often tended to disregard the 'abnormal' individual in the past, whereas the study of rare and unusual mutants may reveal facts of evolutionary significance.

I am much indebted to Mr. R. Saunders and to Mr. N. J. Westie for their kindness in obtaining this interesting specimen for me to study and to Mrs. Pamela Harrison for the photograph.

HULL MUSEUM'S ACQUISITION

The geological and other collections of the late Mr. T. B. Parks, of Ulceby, Lincs., have recently been given to Hull Museums. Mr. Parks was for many years a member of the Hull Geological Society, and his collections consist mainly of fossils from East Yorkshire and North Lincolnshire.

Most of the Museum's large and important geological collections were destroyed during the last war. Attempts are now being made to rebuild them, and the Parks collection will fill many gaps.

It is intended that some of the specimens will be used in a new display of 'East Yorkshire Fossils', which will be placed in Wilberforce House. The bulk of the collection will, when catalogued, be incorporated into the reference series which is also being arranged, and can be consulted at the Georgian Houses on request.—D. A. E. SPALDING.

Return to the Wild, by Norman Carr. Pp. 127 with 26 pages of photographs, including 4 pages in colour. Collins, 1962. 21/-.

This is the story of two male lion cubs who were adopted when a few days old by the author while he was a warden in the Kafue National Park in Northern Rhodesia, reared until fully grown and then successfully returned to the wild. The book naturally recalls to mind those of Joy Adamson dealing with Elsa the lioness, and a similar remarkable picture emerges of the mutual trust and friendship which can develop between man and lion. Norman Carr clearly has a deep and sympathetic understanding of lions, and through his very intimate association with them has been able to make close and careful observations on their behaviour and habits under almost natural conditions, since his lions were allowed complete freedom.

The book is exciting, eminently readable and is illustrated by some excellent photographs. Warmly recommended to all lion lovers.

B.A.K.

Animals and Ourselves, by Maxwell Knight. Pp. 160 with 11 photographs and also line drawings by David Cornwall. Hodder and Stoughton. 16/-.

This book is a well-reasoned attack on the ignorant and over-sentimental 'animal lover' in all his (or her) manifestations—the owners of those obese and under-exercised dogs, doomed to an early death; the indulgent parents who encourage their offspring to acquire exotic pets, without bothering to acquaint themselves with the animal's most elementary needs; and the lunatic fringe who object to zoos, circuses, or even the use of animals for research purposes, whilst remaining remarkably indifferent to the starving African, the ill-treated child, or even to the illused rat!

The book contains much useful information about acquiring, training and feeding pets. Unfortunately many of those who would benefit most from reading it will probably not do so. If you number one of these self-styled 'animal lovers' among your acquaintances, you might do worse than giving them this book for Christmas. The animals will be grateful.

C.S.

AUTUMN FORAY AT YORK
September 16th to 18th, 1961

W. G. BRAMLEY

To those of us who have attended these forays for many years a sadness dwelt. No more shall we hear the stirring call 'Come on mycologists' from our late colleague Douglas Hincks, and his encouragement and enthusiasm at the work table will be sadly missed. Others have written of his entomological prowess, but his knowledge of fungi was considerable, especially as he could devote so little time to them each year. There is no doubt that if in early years his attention had been more directed to mycology he would have made as great a niche in that subject as he did in entomology.

We were pleased to have with us Miss G. Waterhouse, President of the British Mycological Society, and Dr. Barrett from Cambridge.

Saturday was spent at Nun Appleton where the ground was rather dry. Still, with careful search quite a number of the smaller species was found, whilst an old half-rotten sack yielded quite a list of its own when examined in the work room. Askham Bog was also fairly dry but a few marshland species were collected. Except after fire the Bog does not produce any quantity of agarics. In the afternoon some members visited Moorlands to the north-east of the city, where a few extra species were gathered. Buttercrambe on the Monday was probably the best collecting ground, though here the larger fungi were not abundant.

The compiler's thanks are due to all who helped with collecting and for lists, especially to Miss Waterhouse for Myxomycetes and Phycomycetes; W. D. Graddon for Discomycetes; Drs. Webster and Booth for Pyrenomycetes and Fungi Imperfecti, and especially to R. Watling for his list of some 120 Basidiomycetes.

A = Askham Bog.

M = Moorlands, V.C. 62.

B = Buttercrambe, V.C. 62.

N = Nun Appleton.

† Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*.

* Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 62 or 64.

MYXOMYCETES (Miss G. Waterhouse)

† *Diderma* sp. has some characters of *D. spumarioides* and *D. globosum*; differs from latter in smooth spores, A.

* *Physarum pusillum* Lister, A.

PHYCOMYCETES (Miss G. Waterhouse)

* *Bremia lactucae* Regel, on *Centaurea nigra*, A.

Thamnidium elegans Link, on sacking, N.

PLECTASCALES (J. Webster and C. Booth)

† *Arthroderma curreyi* Berk, on woollen cloth, A.

* *Perisporium funiculatum* Preuss., on sacking, N.

P. vulgare Corda, on sacking, N.

† *Petriella asymetric* Curzi, on sacking, N.

HYPOCREALES (C. Booth and J. Webster)

† *Melanospora leucotricha* Corda, on sacking, N.

† *Nectria dealbata* Berk. & Br., on *Acer*, B. Dr. Booth writes that this is a common tropical fungus which has been isolated and the conidial stage grown several times at C.M.I. Masses of the conidial stage were found near the site of a circular saw and it may have been recorded in the past under *Graphium* or related genera.

† *N. magnusiana* Rehm., on *Diatrypella favacea* on *Betula*, N.

† *N. pallidula* Cooke, on *Acer* & *Aesculus*, N.

† *N. pinea* Dingley, on *Pinus* sp., B.

SPHAERIALES (C. Booth and J. Webster)

**Chaetomium murorum* Kunze, on sacking, N.†*Chaetosphaeria innumera* Tul., on *Betula*, N.

DISCOMYCETES (W. D. Graddon and W. G. Bramley)

Calycellina (Hyaloscypha) punctiformis* (Grev.) v. Hohn., on *Quercus* leaves, N.†*Cenangium ferruginosa* Fr. ex Fr., on *Pinus* sp., B.Coryne cylichnium* (Tul.) Boud. (= *urnalis* (Nyl.)), N.**Dasyscypha acuum* (A. & S.) Sacc., on *Pinus* sp., B.†*D. controversa* (Cooke) Rehm., on *Phragmites*, A. (Although not listed in Catalogue, fairly common over the county and I have seen (1951) nearly every dead stem of *Phragmites* in the dykes of Askham Bog covered with this species.)**D. crucifera* (Phill.) Sacc., on *Myrica*, A.**D. mollissimus* (Lasch.) Dennis (= *leucophaea* (Pers.)), on *Epilobium*, N.†*D. pudibunda* (Quel.) Sacc., on *Salix*, A.†*Galactimia limosa* (Grelet) Le Gal., A.**Helotium salicellum* Fr., A.†*Mollisia caracina* Fautrey, A.†*Orbillia curvatispora* Boud., A.†*Otidea umbrina* (Pers.) Bres., M.†*Pezicula cinnamomea* (DC.) Sacc., B.†*P. livida* (B. & Br.) Rehm., on *Salix*, B.**Rutstroemia luteo-virescens* (Rob) White, N.

FUNGI IMPERFECTI (C. Booth)

†*Diplodia pinea* (Desm.) Kickx., on *Pinus*, B.†*Cheiromycella gyrosa* (Cooke & Masee) Mason, on *Larix*, B.†*Coniothecium betulinum* Corda, on *Betula*, B.†*Papularia sphaerosperma* (Pers.) v. Hohn., on *Phragmites*, A.†*Ramularia valerianae* (Speg.) Sacc., on *V. officinalis*, A.

AGARICALES (R. Watling)

†*Clitocybe langei* Sing. ex Hora, B.**Collybia palustris* (Peck) A. H. Smith, A.†*Coprinus angulatus* Peck, B.N.†*C. lagopides* Karst., N.†*C. radicans* Romagn., B.**Galerina mycenopsis* (Fr. ex Fr.) Kuhn., B.†*G. sideroides* (Bull. ex Merat) Kuhn., B.†*G. tibiiocystis* (Atk.) Kuhn., A.**G. vittaeformis* (Fr.) Moser, N.**Gymnopilus junonius* (Fr.) P. D. Orton, N.†*G. penetrans* (Fr. ex Fr.) Murr., B.**Inocybe napipes* J. Lange, M.†*Lactarius tabidus* Fr., M.†*Lepiota fulvella* Rea, N.†*Leucocoprinus brebissonii* (Godey apud Gillet) Locquin, M.†*Mycena bulbosa* (Cejp) Kuhn., A.**M. speirea* (Fr. ex Fr.) Gillet, N.**M. vitilis* (Fr.) Quel., N.**Nolanea minuta* Karst., A.†*Pholiota spumosa* (Fr.) Sing., B.†*Pluteus atromarginatus* (Konrad) Kuhn., B.†*Russula betularum* Hora, A.B.

APHYLLOPHORALES

**Ganoderma lucidum* (Leyss.) Karst, N.†*Polyporus schweinitzii* Fr., M.†*Trametes rubescens* (A. & S.) Fr., A.

BOOK REVIEWS

Animal Dispersion in relation to Social Behaviour, by V. C. Wynne-Edwards. Pp. vii + 653 with 11 plates and 50 text figures. Oliver and Boyd, 1962. 55/-.

This is an important book, both for the naturalist and for biologists in general. The topics discussed relate, on the one hand, to social organisation from its origins in lower animals through its manifold patterns in higher animals to the origin of moral conduct in man and to the extent and importance of tradition in animal societies; and, on the other hand, to the ways in which individuals of a species behave towards each other and the significance of this behaviour in terms of the dispersion patterns so determined, with all their consequences relative to the maintenance of the population as a viable unit. As a unifying principle the idea is set forth that the populations of each animal species have, by group selection, tended to evolve intrinsic density-dependent mechanisms for the regulation of numbers—very often of considerable complexity and delicacy—so that the ultimate check, starvation, rarely comes into play. Naturally these intrinsic mechanisms are more highly evolved in the higher animals. Instead of an undisguised competition for food, the patterns of social behaviour allow and indeed promote conventional competition. These patterns involve adequate communication between individuals and the first few chapters review the signals used for this purpose—visual signals, sounds, smells, etc. They also involve, when densities are sufficiently high, a social selection of individuals, whose effect will be to limit the reproductive output of the population. The conventions for contest are varied and detailed consideration is given to territories of various kinds and to the implications of social hierarchies. The rôle of communal displays and communal roosts as opportunities for assessing densities by the individuals concerned, is cogently argued and the whole subject of 'sexual selection' is re-examined in the light of this possibility that contest between males may indeed provide an excellent mechanism for the regulation of population size. The last few chapters of the book examine in detail the components of the homeostatic process—the control of recruitment into the population and of migration and of socially induced mortality. The number and diversity of the animals chosen to illustrate this thesis provide impressive evidence of the many and likely ways in which populations may achieve this homeostasis. That convincing quantitative descriptions of such homeostatic processes at work in natural populations are not brought forward is no criticism of the author but merely reminds us of the exciting possibilities in ecology for the future and the ideas presented in this book will certainly stimulate research directed towards these ends. Perhaps the least satisfactory part of the book is the application of the theory to the phenomenon of sibling sympatric species, a topic which the author recognises as 'among the most difficult we have encountered'. He devotes no more than twelve pages to this field, and probably wisely since a more extended treatment at this stage of our knowledge would have yielded little more.

The central theme of the book is well maintained throughout, giving it a fundamental unity in spite of the diversity of the topics discussed. The ideas are presented boldly, often provocatively, but never rashly and the very nature of such a wide-ranging theory necessitates the extensive review of evidence, inevitably circumstantial, which brings the book to 600 pages. The hasty reader will welcome the concise summaries at the end of each chapter but, in omitting to explore the lucid development of theme and, very often too, the delightful by-ways of thought, in the main section of each of the chapters, he will lose much. The book is a model of good arrangement. It is highly readable and also easy to use as a reference book.

EDWARD BROADHEAD

British Prosobranch Mollusca, by V. Fretter and A. Graham. Pp. xvi + 755 with 317 text figures. Ray Society, 1962. 88/-.

This is a monumental work by two experts, each of world-wide reputation in this field. Its outstanding characteristic is originality; new descriptions and new diagrams abound throughout almost the whole of the 750 pages. One can appreciate this for example in the account of the anatomy of *Littorina*, where the figures and text obviously stem from a very detailed and exact knowledge of the animal.

The main part of the book deals with functional anatomy, all the various organ systems being considered in turn. Anatomy is dealt with with far greater precision than any other book on Mollusca known to the reviewer and much of modern

physiology is related to this anatomy. For example, the relationship of kidney function to osmotic balance and the connection between such relationships and the ecological problems connected with marine, estuarine, and fresh-water forms is considered in the light of all information at present available. Even very recent work, such as that on molluscan neurosecretory mechanisms, which cannot yet be integrated into the general pattern of their physiology, finds its place.

The chapter on the shell is detailed, informative and invaluable to those collectors who would really know the architecture of their treasures. The section on development and larval forms is interesting but assumes a considerable previous knowledge of embryology on the part of the reader. Chapters on the ecology of various species occupy the last 130 pages or so and in a sense these produce a meaningful synthesis of what has gone before. The growth, feeding habits, homing instincts, etc., of the various kinds of limpets and whelks are considered in detail, and the distribution of the fresh-water and terrestrial prosobranchs is treated in relation to salinity, temperature requirements and feeding habits. There is also a chapter on parasites for parasitologists and a section on relationships and classification which cannot but interest the comparative morphologist and embryologist.

In short, this is a work of reference covering every aspect of Prosobranch zoology, detailed and authoritative, but not so specialised that any well-trained general zoologist cannot comprehend. It is expensive but there is much for the money.

H.H.

Reptiles and Amphibians of Europe, by Walter Hellmich. Pp. 160 with

68 full colour plates by Irmgard Daxwanger. Blandford Press, London, 1962. 16/-.

Students of British amphibians and reptiles are well served by Malcolm Smith's book in the *New Naturalist* series, but there has been a sad lack of a good, inexpensive and readily available book written in English dealing with the species found in Europe. The herpetofauna of Great Britain contains only about a dozen native species, whereas that of Europe as a whole is far richer, with over ten times this number, and now that continental holidays are almost commonplace, the amateur herpetologist would surely welcome a guide to the species he might see on his travels.

The present book is quite excellent and admirably fulfils this need. There are detailed descriptions with notes on habitat, behaviour and distribution for almost all the species given in Mertens and Müller's checklist of *Amphibians and Reptiles of Europe*, and for many of the recognised sub-species and varieties. The 68 colour plates, each of half-page size are helpful for rapid identification of the commoner species. There is a thirty page section giving a concise account of the anatomy, physiology and classification of reptiles and amphibians. There is also a short account dealing with the care of these animals as pets, supplemented with frequent notes throughout the book as to the suitability of a species for confinement and the conditions required.

The author is at the Zoo at Munich, and the book is a translation of the German text published in 1956, but a brief note has been added indicating British species. All those interested in these animals are strongly recommended to obtain this very informative book, and the Blandford Press should be congratulated on being able to publish a book which is nicely produced and with so many colour plates at the extremely reasonable price of sixteen shillings.

In passing, it is sad to note that while amphibians and reptiles are now protected by law in nearly all continental countries, this is not the case in England. Here snake-killing still seems to be regarded as a public spirited virtue.

B.A.K.

Animals of Britain, edited by L. Harrison Matthews. Nos. 1-8 on Badgers, Horseshoe Bats, Hedgehogs, Water Voles, Grey Squirrels, Red Squirrels, Grey Seals and Otters. Pp. 24 with approximately 50 photographs and line drawing of skeleton in each. Published by the *Sunday Times*, 1962, at 3/6 each.

This series of booklets by reputable naturalists is a 'must' for all children interested in nature. Each booklet is well written and beautifully illustrated by either new photographs or well selected ones which have appeared before; it is excellent value for the money and I look forward to the publication of the rest of the series. It should be purchased for the libraries of all junior schools as it would be most popular with the children and a source of sound information.

E.H.

Systematic Dictionary of Mammals of the World, by Maurice Burton. Pp. 307 with numerous illustrations. Museum Press, 1962. 35/-.

Most of us have at times stood before animals in zoos or museums and wished for more information about the native countries, characteristics, habits and present status of the animals before us; or we have read in magazines, travel books or elsewhere the names of unfamiliar animals about which we should like to know more. Where does one turn for a compact and accurate account of the essential facts concerning any mammal from any part of the world? This book supplies the answer. It is systematically arranged but reference to any species is facilitated by the comprehensive index. David Pratt's excellent scraper-board drawings add greatly to the attractiveness of this very useful reference book.

W.A.S.

Birds in Britain, by Kenneth Richmond. Pp. 160 with 80 pp. of photographs by the author (8 in colour). Odhams Press Ltd. 30/-.

Here is a book for beginners and others to whom a broad, compressed, but comprehensive view of 'the rise and progress of British ornithology', with notes on identification and distribution of British species, will be useful. To call the book (*vide* 'jacket') 'A Practical Guide to Identification, Habitats, and Behaviour' is to overstate its merits, which are considerable. A great deal of work, knowledge and detailed reference has gone into it. The author writes well, with a clear grasp of the essentials concerning most species, and there are few of us who could not learn something from his book. His task would have been much easier with more space available.

I could wish Mr. Richmond had used less space for the larger species, especially for game birds (12 pages for 8 species), half of which would have made his book more useful and interesting if allocated to passerines (28 pages for 82 species). There was no need to waste space on a journalistic version of grouse-shooting in a book of this kind.

As would be expected the book is well printed and produced, and good value for its price. The photographs include many that are excellent and unusual; and some that are less so, as has happened before in books by bird-photographers who have not associated fully with their fellows over the years.

R.C.

Birds of the Night, by E. Bösiger and P. Faucher. Pp. 92 with 71 photographs; *The World of Nature Series*: 6. Oliver and Boyd, 1962. 7/6.

Like others in this series, *Birds of the Night* is essentially a book of illustrations, linked by a fragmentary but imaginative and informative text, in this case a translation from the French. Like the title, many of the photographs have the stamp of familiarity about them and it is not surprising to find names such as Barth, Hosking, and Yeates included in the list at the end. The photographs are truly delightful and for the most part well reproduced. In a book dealing with the owls of Western Europe, it is a little surprising to find Saw-whet Owls used for the cover illustration, excellent as this colour photograph is.

There is a strong appeal for a more enlightened attitude towards, and for protection of, these majestic and mysterious birds, and apart from its aesthetic qualities it serves a most useful purpose in combating the general ignorance about the nocturnal birds of prey. No one could grumble about the cost.

R.F.D.

Photographing Garden Birds, by C. H. S. Tupholme. Pp. 124, with 4 colour plates and 6 in monochrome. Faber, London, 1962. 18/-.

The author, an amateur photographer with 35-mm. equipment, tells how he attracts birds to his garden, and describes his cameras and lenses, together with a mass of technical detail. A chapter with diagrams is devoted to hides. He considers daytime light values extremely erratic and solves the problem by using flashbulbs and electronic flash. It is a book by an expert on colour-film work and is likely to appeal to the ever-growing band of colour-snappers who are fond of garden birds. The four black and white studies are all-bird; all four in colour are startling and untrue.

J.A.

The Structure and Distribution of Coral Reefs, by **Charles Darwin**. Pp. xii + 214 with three maps and 21 figures. University of California Press: agents, Cambridge University Press. 17/-.

The Naturalist on the River Amazons, by **Henry Walter Bates**. Pp. viii + 465 with two maps and numerous text illustrations. University of California Press: agents, Cambridge University Press. 21/-.

All naturalists should welcome the publication of new additions of these two famous books. Darwin's work on coral reefs appeared in 1842 and was the first book he published after returning from the voyage of the *Beagle*. In it he explained, with that combination of scientific thoroughness and philosophic caution which characterised all his writings, the formation of coral reefs and relationship between fringing reefs, barrier reefs and atolls. His simple yet elegant explanation of their origin, which has been vindicated by later study, reveals a penetrating mind capable of seizing on the crucial aspects of the problems involved and an imagination that ranged freely over time and space.

Bates was one of the greatest traveller-naturalists and collectors, and his account of eleven years spent in the Amazon valley during which he collected over 8,000 animals new to science, is a natural history classic. His unquenchable zest for studying and collecting animals of all kinds and observing and recording accurately information about the country through which he travelled and the people with whom he came in contact, were proof against all the privations and hardships entailed by his hazardous journey. The book is a superb and unsurpassed account of tropical natural history, packed full of interest from cover to cover; and it gains enormously from the simple and direct manner of the telling. Every young naturalist should read this book for it has a value which transcends the information which it contains though that alone should fire his imagination and act as a powerful stimulus to his enthusiasm.

W.A.S.

To the Mountains of the Stars, by **L. D. Brongersma** and **G. F. Venema**, translated from the Dutch by A. G. Readett. Pp. xvi + 318 with 48 plates and 23 line drawings. Hodder & Stoughton, 1962. 42/-.

This is the account of a Dutch scientific expedition to New Guinea to investigate one of the last unexplored places remaining on earth. The fauna and flora are rich in species, for the country ranges from lowland tropical forests to snow and ice-covered peaks over 15,000 ft. in height. The Star Mountains lie in the area immediately west of the Dutch-Australian boundary and in the course of this expedition two previously unscathed peaks were climbed and the first coast-to-coast crossing of the island in its broadest part was made. By comparison with the travels of the great naturalists of last century, this was a stream-lined affair with radio contact, air reconnaissance and helicopter supply lifts; and one would gladly have foregone many of the details of the minor hitches, trials and tribulations of this comfortably equipped expedition in favour of more about the natural history. Even so there is much of interest on the plants and animals encountered during the exploration of this fascinating country and on the primitive tribesmen in whose territory the expedition worked. The book is finely and generously illustrated by colour photographs and the many sketch maps are invaluable in enabling the reader to follow the course of the various subsidiary expeditions in the intricate system of valleys and ridges which penetrate the central range of mountains.

W.A.S.

Wild Company. Encounters between Man and Beast. Edited by **Eric Duthie**. Pp. 301. Heinemann, London. 21/-.

In this selection of animal stories by well-known writers we meet many familiar friends—Gavin Maxwell's otter, Elsa the lioness, Konrad Lorenz's water shrews, and those minute pelagic crabs which stowed away aboard the *Kontiki*, to mention just a few. Fabre, Julian Huxley, Richard Jeffries and W. H. Hudson are also represented. There is even an item on the training of performing fleas. Not all the pieces are of equal merit, but the selection is pleasantly varied and this volume can be heartily recommended as a bedside book or travelling companion, the more so because typography and format are excellent and the book, though quite sizable, weighs surprisingly little.

C.S.

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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.
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THE LINYPHIID SPIDERS OF ASKHAM BOG

CLIFFORD J. SMITH

Yorkshire is one of the best documented counties of Britain regarding its spider fauna, and it is surprising that so little has been published on the spiders of Askham Bog. For many generations the Bog has been known as an area of outstanding interest to the entomologist with its large number of unique and rare insects, and it might be deduced that the arachnologist might be equally rewarded. In particular, conditions are ideally suited to the Family *Linyphiidae*—mostly small spiders which need constant humidity for their survival. Yet, in the Linyphiid section of Falconer's list of Yorkshire Spiders (2) only four species are mentioned as occurring at Askham Bog while Chaloner's Whin (adjacent to the Bog) is mentioned in connection with only eight species.

This neglect may be attributed to a number of causes. Firstly, there has been no arachnologist living in or near York this century who has done much work on the *Linyphiidae*. Then, the Bog was maintained as a game preserve from the late 19th century until the Second World War and naturalists were restricted in their access. Also the Linyphiids are mostly so small as to offer difficulty in identification to the amateur; and they frequently reach maturity during the autumn, winter and spring when flooding tends to make the Bog less accessible and attractive to the naturalist.

Askham Bog is situated about $2\frac{1}{2}$ miles from the centre of the City of York; its total area is about 80 acres, the greater part of which is wooded. It is almost completely surrounded by glacial moraines which contain sufficient limestone material to make their drainage water slightly alkaline, thus producing neutral conditions over much of the Bog. There is consequently a noticeable similarity between Askham Bog and the East Anglian fens, although the former is further advanced in its ecological development than, say, Wicken Fen. The common occurrence of Birch, Oak, Alder, Willow (*S. cinerea*), Alder Buckthorn (*Frangula alnus*), *Calamagrostis canescens*, *Cladium mariscus*, etc. indicates the nature of the Bog.

Such similarities led me to hope that there might be as interesting a spider population at Askham Bog as there undoubtedly is at Wicken Fen. Therefore, during the past five years I have been collecting spiders from the Bog at all seasons, in all weathers, and from a wide variety of habitats. The present paper deals with the *Linyphiidae* only.

The bulk of the specimens came from piles of cut reeds, sedges and grasses, the tops of which were normally above the winter flood level. Other specimens were collected by hand from detritus, tussocks (particularly of *Carex elata*) and cushions of moss (including small patches of *Sphagnum*): as well as by sweeping and beating. A Tullgren Funnel, based on a design kindly supplied by the Bureau of Animal Population at Oxford, was used to extract spiders from various materials. Automatic traps containing phenyl mercuric acetate were not very successful as far as Linyphiids were concerned.

The following table summarises the results I have obtained. Please note—

- a. The order and nomenclature follows the check list included in Locket and Millidge's *British Spiders* (3).
 - b. Relative Abundance: The figure in this column indicates the actual number of specimens of each species that were taken between January 1st, 1960 and September 1st, 1961.
 - c. Seasonal Occurrence: Numbers refer to the months in cases where specimens were too few to indicate seasonal data.
 - d. East Anglia: For comparison with fenland records:
W = recorded at Wicken Fen (1).
S = recorded in the West Suffolk Fens (4).
- * A new record for Yorkshire.

It will be seen from column 4 of the table that there is a large number of Linyphiid spiders common to the East Anglian Fens and Askham Bog; some are species that are found in a variety of habitats, while others are characteristic of fenland only. *Entelecara omissa* O.P.-C. was for a long time regarded as being confined to Wicken, but specimens have been taken in recent years from other East Anglian Fens, and now it has been recorded on three separate occasions at Askham Bog.

SPECIES	Relative Abundance	Seasonal Occurrence	East Anglia	Notes
<i>Ceratinella brevipes</i> (Westring) ♂ ♀	4	2.5.12	W.	
<i>Walckenaera acuminata</i> Blackwall ♀	3	2.6.12	—	
<i>Trachynella nudipalpis</i> (Westring) ♂ ♀	270	Au. Wi. Spr.	W.	Very common in cut reeds in winter.
<i>Cornicularia unicornis</i> (O.P.-Cambridge) ♂ ♀	6	Winter	W.S.	Recorded by Falconer from Chaloner's Whin.
<i>Cornicularia kochi</i> (O.P.-Cambridge) ♂ ♀	365	Au. Wi. Spr.	—	Frequently found with <i>T. nudipalpis</i> .
<i>Cornicularia vigilax</i> (Blackwall) ♂	1	5.	W.S.	
<i>Entelecara acuminata</i> (Wider) ♂	1	5.	—	
* <i>Entelecara omissa</i> O.P.-Cambridge ♀	3	Spr. Sum.	W.S.	Common at Wicken Fen. New to Yorkshire.
<i>Erigonidium graminicola</i> (Sundevall) ♂ ♀	4	6.	W.	Recorded by Falconer from Chaloner's Whin
<i>Gnathonarium dentatum</i> (Wider) ♂ ♀	2	2., 9.	W.S.	
<i>Gongylidium rufipes</i> (Sundevall) ♂ ♀	16	Spr. Aut.	W.	
<i>Dismodicus bifrons</i> (Blackwall) ♂ ♀	3	Sum.	W.S.	
<i>Hypomma bituberculatum</i> (Wider) ♂ ♀	25	Spr. Sum.	W.S.	Typical of wet places.
<i>Hypomma cornutum</i> (Blackwall) ♂	1	5.	W.	
<i>Gonatium rubens</i> (Blackwall) ♂ ♀	2	9.	—	
<i>Maso sundevalli</i> (Westring) ♀	4	Spr. Sum.	W.	
<i>Pocadicnemis pumila</i> (Blackwall) ♂ ♀	7	Summer	W.S.	
<i>Oedothorax gibbosus</i> / <i>tuberosus</i> (Blackwall) ♂ ♀	16	Sp. Su. Au.	W.S.	Two spp. separated by male characteristics.
<i>Oedothorax fuscus</i> (Blackwall) ♀	7	Spr. Sum.	W.	
<i>Oedothorax retusus</i> (Westring) ♀	2	4, 12.	W.	
* <i>Lophocarenum paral-</i> <i>lelum</i> (Wider) ♀	3	8.	—	New to Yorkshire.
<i>Silometopus elegans</i> (O.P.-Cambridge) ♂ ♀	3	Sum.	W.	
<i>Tiso vagans</i> (Blackwall) ♀	1	8.	W.	
<i>Lophomma punctatum</i> (Blackwall) ♂ ♀	15	Au. Wi. Spr.	W.S.	
<i>Gongylidiellum vivum</i> (O.P.-Cambridge) ♂ ♀	3	Wi. Spr.	W.	
<i>Micrargus herbigradus</i> (Blackwall) ♀	2	Spr.	—	
<i>Erigonella hiemalis</i> (Blackwall) ♀	2	2.	W.	Recorded by Falconer from Chaloner's Whin.
<i>Savignia frontata</i> (Blackwall) ♂ ♀	32	Au. Wi. Spr.	W.	

SPECIES	Relative Abundance	Seasonal Occurrence	East Anglia	Notes
<i>Diplocephalus permixtus</i> (O.P.-Cambridge) ♂ ♀	15	Wi. Spr.	—	Recorded by Falconer from Askham Bog.
<i>Diplocephalus latifrons</i> (O.P.-Cambridge) ♀	3	Spr.	—	
<i>Diplocephalus picinus</i> (Blackwall) ♀	3	Spr. Sum.	S.	Recorded by Falconer from Chaloner's Whin.
<i>Erigone dentipalpis</i> (Wider) ♀	1	9.	W.S.	
<i>Erigone atra</i> (Blackwall) ♂ ♀	5	Au. Wi.	W.S.	
<i>Leptorhopttrum robustum</i> (Westring) ♀	1	4.	S.	A spider of wet places.
<i>Drepanotylus uncatas</i> (O.P.-Cambridge) ♀	3	Spr. Au.	—	More frequent in north,
<i>Hillhousia miseva</i> (O.P.-Cambridge) ♀	6	Wi. Spr.	—	A spider of wet, swampy places.
<i>Porrhomma pygmaeum</i> (Blackwall) ♂ ♀	c. 500	Au. Wi. Spr.	W.	The commonest small Linyphiid at Askham Bog.
<i>Porrhomma convexum</i> (Westring) ♂ ♀	c. 200	Au. Wi. Spr.	—	
<i>Agyneia caula</i> (O.P.-Cambridge) ♀	1	5.	—	Recorded by Falconer from Chaloner's Whin.
* <i>Agyneia ramosa</i> Jackson ♀	1	6.	—	New to Yorkshire.
<i>Meioneta rurestris</i> (C. L. Koch) ♂ ♀	6	Su. Au. Wi.	W.	
<i>Microneta viaria</i> (Blackwall) ♀	1	Winter	W.S.	
<i>Centromerus expertus</i> (O.P.-Cambridge) ♂ ♀	92	Au. Wi. Spr.	W.	
<i>Centromerita bicolor</i> (Blackwall) ♀	4	Au. Wi.	W.	
<i>Bathyphantes dorsalis</i> (Wider) ♂ ♀	8	Spr. Au.	W.	Recorded by Falconer from Chaloner's Whin.
<i>Bathyphantes concolor</i> (Wider) ♂ ♀	2	W. Spr.	W.	
<i>Bathyphantes approximatus</i> (O.P.-Cambridge) ♂ ♀	66	Au. Wi. Spr.	S.	Recorded by Falconer from Askham Bog.
<i>Bathyphantes pullatus</i> (O.P.-Cambridge) ♂ ♀	43	All year	W.S.	Recorded by Falconer from Askham Bog and Chaloner's Whin.
<i>Bathyphantes gracilis</i> (Blackwall) ♂ ♀	4	Winter	W.S.	
<i>Bathyphantes parvulus</i> (Westring) ♂	1	7.	W.	
<i>Bathyphantes nigrinus</i> (Westring) ♂ ♀	53	All year	—	
<i>Floronia bucculentia</i> (Clerck) ♀	2	7. 9.	—	
* <i>Taranucnus setosus</i> (O.P.-Cambridge) ♂ ♀	6	Au. Wi. Spr.	W.S.	New to Yorkshire
<i>Lepthyphantes alacris</i> (Blackwall) ♀	1	2.	—	
<i>Lepthyphantes tenuis</i> (Blackwall) ♂ ♀	10	All year	W.S.	

SPECIES	Relative Abundance	Seasonal Occurrence	East Anglia	Notes
<i>Lepthyphantes zimmermanni</i> Bertkau ♂ ♀	3	1. 7. 8.	S.	
<i>Lepthyphantes ericaeus</i> (Blackwall) ♂ ♀	35	Most of year	W.S.	
<i>Lepthyphantes obscurus</i> (Blackwall) ♂ ♀	2	5. 6.	S.	
<i>Helophora insignis</i> (Blackwall) ♀	1	9.	—	
<i>Linyphia triangularis</i> (Clerck) ♂ ♀	—	8. 9. 10.	W.	Seasonally abundant, specimens not collected
<i>Linyphia montana</i> (Clerck) ♂ ♀	5	Summer	W.	
<i>Linyphia clathrata</i> Sundevall ♂ ♀	8	Au. Wi. Spr.	W.S.	
<i>Linyphia peltata</i> Wider ♂ ♀	2	5. 8.	—	
<i>Linyphia pusilla</i> Sundevall ♂ ♀	4	5. 6.	S.	
<i>Linyphia impigra</i> O.P.-Cambridge ♀	1	7.	S.	
<i>Mengea warburtoni</i> O.P.-Cambridge ♂ ♀	14	7. 8.	W.	Found on two occasions only.

Wicken has its rarities, found nowhere else in Britain, such as *Maro sublestus* Falc. but so far my rather limited collecting at Askham Bog has failed to reveal a corresponding northern species which can be claimed as unique. At Wicken some species such as *Gongylidiellum murcidum* Simon are common in the Fen yet rarely recorded elsewhere. Askham Bog has a parallel to this in *Cornicularia kochi* (O.P.-C.) which has been very rarely found elsewhere and yet can be collected by the hundred in piles of cut down *Phragmites* at the Bog during the winter. The discovery of such large numbers of what was regarded as a rare species, has led to specimens being sent to national collections in Oxford, the United States and elsewhere.

Comparing Bristowe's (1925) Wicken List with my own for Askham Bog, the latter has 23 Linyphiid species not recorded at Wicken Fen which, in turn, has 27 species not found at the Bog. More recent work by Wild (5) adds a further seven to the Wicken list, and there are probably other additions of which I am not aware. However, I am sure that more intensive work at the Bog would be rewarding, since I am frequently finding new spp. to add to my list. Although the Bog does not measure up to Wicken Fen as a place where rare and unusual specimens can be commonly recorded, it certainly has provided a much greater attraction than Falconer's 1918-22 list suggested.

In conclusion I would like to thank Mr. G. H. Locket for his kindness in checking the identification of some of the less common species I have collected at the Bog, and in reading through the typescript of this article.

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NOTES ON THE NATURAL HISTORY OF SOME SOUTH YORKSHIRE FLASHES, 1954-61

T. M. CLEGG

Many of the aquatic bird habitats of South Yorkshire have arisen as a result of industrial activities in the district. Typical of these are the flashes which occur in areas where subsidence due to subterranean mining operations has taken place. Flashes usually consist of areas of shallow water surrounded by marsh land, and often occur on farm land which has always had a tendency to hold water. They are not popular with the farmers on whose land they occur and attempts to drain them or fill them in are frequent. Their existence is always threatened and some of them have rather short lives, but often they are very attractive to birds, and local faunal lists often owe their records of rare and irregular visitors to the presence of these unusual habitats.

Since the recognition of flashes as aquatic habitats of some importance in this country, very little has been written about them from a general ecological point of view. Edmonson (1954-55) in his account of the birds of the south-east Lancashire flashes gives some indications of the conditions prevailing at the Leigh and Astley flashes and shows how precarious the position of this type of habitat is in a highly populated industrial area. These flashes were beset by problems which occur widely in South Yorkshire—general disturbance, illegal shooting and above all the difficulties which arise when industry in the area requires more space for its waste products, which either fill in the flashes or cause serious pollution. The following notes are intended to show something of the ways in which these habitats can change with a general impoverishment of the bird fauna in an area where the borderline between success and failure is narrow at the best of times. All the species concerned still occur elsewhere in the district but in small numbers, and if the changes described had taken place anywhere but on the most attractive section of the marsh they would probably have passed almost unrecorded.

During the years 1954-61 a number of naturalists from the Barnsley district carried out observations on the birds of a number of flashes in the Dearne Valley between the village of Broomhill and Wath Main Colliery. This area lies along the south bank of the River Dearne and contains a number of flashes as well as extensive turloughs during the winter months. Kendall and Wroot (1924) mention a large subsidence in this area due to mining which converted about four square miles of the Dearne Valley, between Darfield and Wath-on-Deerne, into a dismal swamp. The area on which we made our observations lies approximately in the centre of this swamp, just to the west of Wath Main Colliery, mainly on the land marked on published maps as Old Moss Farm. However, in order to distinguish these flashes from others in the district, we adopted the name of Wath Main Ings, and the records of birds recorded here which have appeared in the annual ornithological reports of the Yorkshire Naturalists' Union and the Doncaster and District Ornithological Society use this name. In order to keep the names of the various types of waters as precise as possible I have used the names given by Yapp (1955).

While most of our energies were directed at recording the birds of the area, I also kept notes on the vegetation and small aquatic animals which appeared to form the principal food supply of the birds. During the first year, however, the birds were the main attraction and I have therefore chosen 1955 as the year in which conditions on the marsh were at their best to provide a description of the plant and animal community before its degeneration.

In 1955 the marsh provided many interesting records of migrant birds and the breeding bird population was high. The vegetation in and around the flashes was luxuriant and the aquatic invertebrates and fish which occurred were abundant and varied. The whole presented a picture of a well-balanced community. The main area of the marsh consisted of two large flashes, since joined by subsidence, which had an area of about four acres and a number of small flashes and pools. The submerged vegetation consisted largely of Canadian Pondweed (*Elodea canadensis*), Amphibious Bistort (*Polygonum amphibium*), Water Crowfoot (*Ranunculus aquatilis* agg.) and Pondweeds (*Potamogeton* spp.). Around the flashes and on the nearby marshland were beds of Soft Rush (*Juncus effusus*) and reeds (*Sparganium* and *Scirpus* spp.). The fields which held the flashes were used as pasture for cows and these tended to graze on the Soft Rush in places, keeping it well below its normal level of growth.

On the site occupied by the spoil heap of Wath Main Colliery there was another pool, a water which almost defies classification. It had an area of about one acre with about two acres of open mud between the pool and the slope of the spoil heap. The mud was composed mainly of finely-divided coal which had apparently washed down from the heap behind. The aquatic vegetation was mainly made up of algae which formed dense mats in the shallow water and a few stands of impoverished reeds (*Phragmites communis*) which stood well back from the water's edge. This water had apparently once been a fairly pleasant pond and even in 1955 a few of the local people made attempts to fish in it. I was sceptical about the existence of fish in these turbid waters but in the drought of 1959, when the pool dried out completely, I found the remains of several large perch (*Perca fluviatilis*) in the mud. Since the pool had no connection with any waters containing fish and I do not believe that the bones and scales had been abandoned by fish-eating birds, I could only assume that they had been present all the time.

Adjacent to the marsh on the Broomhill side was an area of rough land which provided nest sites for a number of species of birds and a refuge in times of disturbance for others. This consisted of about 30 acres of former farm land which had been used as a coal-stocking site but with the removal of the coal had become overgrown. In 1955 it was an area of rank grass with open patches of shale and a certain amount of dense Mugwort (*Artemisia vulgaris*) and Rose-bay (*Chamaenerion angustifolium*). In the damper sections there was a thin growth of Soft Rush and a few small willows (*Salix* sp.). It was essentially industrial waste land in its vegetation.

The aquatic animals of the area no doubt provided the principal food for many of the birds and the spoil heap pool was the main theatre of water activity. The most prominent forms here were river worms (*Tubifex* sp.) and the fresh-water shrimp (*Gammarus pulex*). The former formed thick masses in the mud and the latter was extremely plentiful in the shallow waters of the flashes and the coal heap pool, where some individuals were the largest I have ever seen. During periods of heavy rain when the marsh was flooded they could be found well away from the normal area of the flashes and as the water subsided they were often stranded in large numbers. Insects, particularly Coleoptera and Hemiptera were abundant in the flashes, several species of water boatman (*Notonecta* sp.). Molluscs were plentiful particularly members of the genera *Limnaea* and *Planorbis*. The only species of fish in the flashes was the three-spined stickleback (*Gasterosteus aculeatus*) which was abundant. Amongst the birds breeding on the marsh in 1955 were the Little Grebe (*Podiceps rufficollis*), Mallard (*Anas platyrhynchos*), Shoveller (*Anas clypeata*), Tufted Duck (*Aythya fuligula*), Lapwing (*Vanellus vanellus*), Redshank (*Tringa totanus*) and Snipe (*Gallinago gallinago*); all species which are found on many industrial waters but which in South Yorkshire are always on the verge of being dispossessed. Along with these many other species occurred, all the usual passage waders and winter-visiting wildfowl as well as breeding passerines such as the Yellow Wagtail (*Motacilla flava*) and Reed Bunting (*Emberiza schoeniclus*).

The abundance of birds continued until 1957 but by 1958 the numbers and variety of birds present began to decline. The reasons for the decline were not apparent at first but by early 1959 the waters of the flashes were devoid of small aquatic invertebrates and fishes and the breeding birds were reduced to small numbers of Lapwing, Redshank, Yellow Wagtail and Reed Bunting. The water in the flashes was reddish in colour and as they began to dry out areas of reddish mud were exposed. Water returned to the flashes in November, 1959, but there was still no life to be seen and the area was almost completely shunned by birds during the winter. The breeding season of 1960 showed no improvement but during the winter of 1960-61 an increase in the number of wintering Snipe was noted and a few more wildfowl began to occur. However, the spring of 1961 showed no real improvement and up to July of this year the flashes were still barren.

By 1958 the vegetation of the marsh had also started to change and the abundant submerged plants were replaced by algae. In the spring of 1959, the marsh was no longer used for grazing and the flashes were fenced off to prevent cows from feeding and drinking in them. The water then contained only algae in the shallow portions. With the removal of grazing pressure the Soft Rush at first grew extremely thickly but by the summer the edges of the beds, which were farthest away from the flashes were dominated by thick tracts of nettles (*Urtica dioica*), thistles (*Cirsium* sp.) and other plants and the Soft Rush began to decline. The reeds too were sparse compared with their former density. In 1957 the coal stocking sites came back into use

and with the clearing of the rank vegetation many birds lost their nest sites. During 1959 the marsh dried out completely during the summer but during the winter, rain pools and flood waters from the River Dearne filled it again. The degeneration was however advanced by this time but I still thought that perhaps water from the river has caused the original pollution.

During July, 1961, I visited Wath Main Ings in company with Mr. A. S. Marshall of the Yorkshire Ouse River Board in order that we might attempt to solve the question of the pollution of the marsh. The water entering the marsh in times of flood was found to be unlikely to cause serious pollution. Although the river is devoid of fish and contains a certain amount of mine water it is relatively clean. Tests of the water entering the flashes from the Broomhill coal-stocking site showed a pH of 2.4 and a high concentration of iron. The growth of the coal stock occurred simultaneously with the degeneration of the marsh and water draining from the coal entered the flashes by a series of ditches. Since the marsh has no regular outlet to the river, the polluting water had been impounded and the acidity plus the presence of the heavy deposition of iron had caused the fauna of the marsh to be killed. The polluting effects of iron according to Lynes (1960) include deoxygenation of the water and a virtual choking of the fauna of the upper layers of mud by the layer of precipitated iron salts. The figures given for the amount of coal present on the Broomhill stocking site are rather interesting when the dates are compared with events on the marsh. 6,000 tons of coal were present in June, 1957, 86,000 tons were present in May, 1958, and had increased to 193,000 tons by December, 1958. This was the period in which the decline of the marsh began and by the peak of the degeneration 450,000 tons were present in the winter of 1959-60.

Consideration of the change in status of some of the species of birds which occurred commonly during the best years of the marsh shows how this area supported the densest population in the district and how the decline of the marsh has affected the local bird population. The failure of the Little Grebe to breed in the spring of 1959 seemed to mark the end of the larger aquatic invertebrates and small fishes in the flashes. This species appeared to provide a reliable guide to the occurrence of these creatures. The changes in the status of other species whilst they are often difficult to relate to the food supply available, are quite noticeable.

LITTLE GREBE

This species failed to breed on the flashes for the first time in 1959 but before then it had been numerous with ten or more pairs present in a number of years. In 1955 eight pairs had eggs on one of the flashes in an area of about $1\frac{1}{2}$ acres. The species still breeds on nearby waters but in small numbers.

HERON (*Ardea cinerea*)

Whilst there is no breeding colony in the vicinity this species was regular in its occurrence at Wath Main Ings, the highest number which I have noted being 11 on a number of occasions in the summer of 1955. The only prey which I was able to identify were frogs (*Rana temporaria*) which were plentiful on the marsh. Smaller numbers of these birds still occur fairly regularly in the district.

MALLARD

The usual breeding season population of the area was formerly about five pairs and although breeding attempts took place regularly success was infrequent. During the winter the number of birds present usually rose but since they were often disturbed they did not tend to stay long. The species is still seen regularly on nearby waters but I have no indication of successful breeding in recent years.

SHOVELER

The shallow waters of the marsh provided ideal feeding conditions for this species during the years prior to 1958 and in those years ten or more pairs could be seen on the marsh in the spring. Later in the year however, numbers usually fell but a number of pairs made attempts to breed. Nests were placed on occasions on the area of grass and scrub now occupied by the coal-stocking site, so that this species lost not only its feeding grounds but also the most favourable nesting sites. It is now infrequent in its occurrence in the area.

TUFTED DUCK

One pair of this species bred successfully on the marsh in 1955 and these flashes were often occupied by the species outside the nesting season. In the Dearne Valley, Tufted Ducks are more frequently met with than Pochard (*Aythya ferina*) but on reservoirs in the district the reverse is generally found. Possibly the bias of the Tufted Duck towards a diet of aquatic animals is the reason. The species still occurs fairly regularly on nearby waters though no further breeding records appear to exist.

LAPWING

This species is widespread in the Dearne Valley as a breeding bird, but since 1958 the numbers of pairs nesting on the land immediately adjacent to Wath Main Ings appear to have declined. Nor have winter flocks of 1,000 or more occurred in recent years. The flocks of Golden Plover (*Pluvialis apricaria*) which accompanied the latter, often in numbers of 500 or more, also seem to have deserted the area.

REDSHANK

Like the previous species, this bird is widespread in the Dearne Valley during the breeding season but it is usually found close to flashes or pools. In its best years, Wath Main Ings usually had about twelve to fifteen pairs but since 1959, three to five pairs have been the normal spring population.

SNIPE

The breeding population of this species was always difficult to estimate, but 20 or more birds were usually present during the spring in the best years. At present, however, on occasions none are to be found in the spring, though *c.* 30 were seen on a number of occasions in the winter of 1960-61. The coal mud which was formerly a favourite feeding ground does not attract them any longer. The species still breeds by other flashes in the area but in small numbers.

These then are the past and present positions of the species which are usually found as breeding birds on waters of this kind. Of a number of other species there is little that can be said. The Little Ringed Plover (*Charadrius dubius*) was added to the list in 1957 when one pair hatched young on the top of Wath Main spoil heap, which at the time was stable enough to have small pools and even sparse beds of *Phragmites*. The Garganey (*Anas querquedula*) occurred almost every year and displays between pairs was noted on occasions, but successful breeding has never been proved. Details of interesting passage waders and wildfowl can be found in the annual ornithological reports of the Yorkshire Naturalists' Union and the Doncaster and District Ornithological Society but Wath Main Ings, like a number of similar waters in Yorkshire, is now eclipsed. However, with the creation of the Fairburn Ings Nature Reserve, a fine example of the Yorkshire 'Slag-watter' still survives.

SUMMARY

1. Observations were carried out on the birds of a series of flashes in the Dearne Valley, in South Yorkshire, from 1954 to 1961. In the early part of this period the flashes contained an abundance of plants and animals and appeared to form a well-balanced community with birds well represented.
2. By 1958 the numbers and species of birds were declining and the aquatic animals were starting to disappear. The plant life too was affected and changes occurred particularly amongst the submerged species.
3. In 1961, an attempt was made to define the cause of the degeneration of the marsh. The reason for the decline was ascribed to the polluting effects of acidic drainage water from a nearby coal-stocking site. Along with this, increased tipping activity at the nearby colliery and the clearing of rank vegetation on the coal-stocking site also contributed to the decline of the bird fauna.
4. The loss of breeding birds on the marsh has substantially reduced the population of the district and some species which did not breed, no longer occur as frequently as they did before the pollution of Wath Main Ings.

ACKNOWLEDGEMENTS

The author is extremely grateful to Messrs. A. Archer, D. Ashurst, C. Bower, M. Rhymer and D. Standing for the way in which our Dearne Valley enterprises

were carried out in the early part of the period covered and also for correspondence received on the subject during the years 1956-59 when his visits to the marsh were few and far between. This paper is the result of all our efforts. Without the help of Mr. A. S. Marshall of the Yorkshire Ouse River Board, the analysis of the pollution would not have been possible. The N.C.B. Opencast Executive very kindly provided figures for the amounts of coal on the Broomhill site. Many people of Broomhill village helped in many ways, particularly Mr. W. Gascoigne, the owner of Old Moss Farm, and Mr. G. Clark who shot over the area of Wath Main Ings.

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Birds and Woods, by W. B. Yapp. Pp. 302 with 28 photographs and illustrations and 42 figures and maps. Oxford University Press, 1962. 35/-.

This is a book which should not only be read by every student of birds, but one which he will wish to keep on his shelves for future reference. It collects together a mine of information both on woodlands and on their avian inhabitants. Other naturalists, also, will undoubtedly find it interesting and useful, since it properly treats its two title subjects and their many links from an ecological point of view.

The author openly admits that he has 'indulged in some dangerous speculations . . . Without speculation science does not progress . . .' Readers will certainly question some of his conclusions. In this he had achieved one of his aims, which has obviously been to stimulate naturalists to watch birds in a more discerning way. The author's collecting of information on common birds over many years, his discussion of the various methods of making a census and his careful compiling of records may perhaps prove an eye-opener and a very necessary example to the 'rarity-conscious' and 'list-ticker' type of bird watcher who is, unfortunately, in the majority these days.

The task of grouping woodlands into various types has obviously proved a formidable one. Yapp's grouping probably suffices, but results in an oversimplification when he assigns different species according to their preferences for different types of woodland. I feel that in some cases he attributes the presence of a species in a certain kind of woodland too much to a preference for that type of woodland, rather than to climatic and geographical factors and to the bird's general distribution. A further bias creeps in as a result of his observations being made chiefly in the north and west of Britain. Thus the Wood Warbler does not appear as a dominant species of beech woods but the Jay does. Nor, perhaps, is enough account taken of population fluctuations. With our present knowledge of population dynamics this is, of course, understandable.

It is difficult to see the justification for including the Reed Bunting as a woodland species—even of woodland edging to water—but not including the Goldfinch, when orchards, parklands and hedgerow trees are grouped as 'semi-woodlands.' Similarly Table 18 (Nest Sites of Woodland Birds) gives that for Yellow Hammer but omits Rook. Y.N.U. members will be surprised that Leeds is given as one of the places with a town-roost of Starlings, but that Bradford gets no mention. It is also a little startling to read of the Starling's method of feeding that, 'The closed bill is thrust into the soil and then opened. The bird looks into the hole so made, to see if there is anything to eat, before the bill is withdrawn.' (My italics.)

These, however, are minor criticisms which do not detract from the general excellence of the work. It is refreshing to find a serious student of birds who can claim that 'birds have a rich psychic life' and who so describes 'the summer birchwoods of Sutherland in which the ripple of the Willow Warbler's song is so continuous that one can no more count the singers than one can the flashes of sunlight on the surface of the burn.'

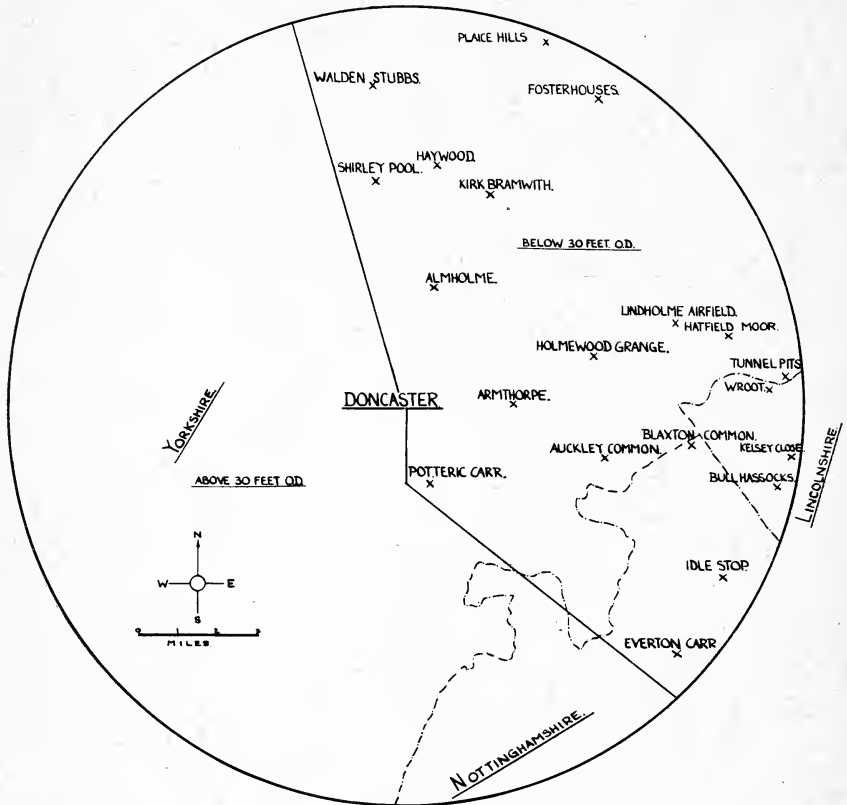
R.F.D.

REPORT ON THE BREEDING OF THE CURLEW (*NUMENIUS ARQUATA*) IN THE DONCASTER DISTRICT IN 1961

(An enquiry conducted by the Doncaster and District Ornithological Society)

COMPILED BY R. J. RHODES

Until comparatively recent years the available county and local bird literature gives very little information concerning the breeding of Curlew within ten miles of Doncaster. In T. H. Nelson's *Birds of Yorkshire* (1906), it is stated that in 1844



PRESUMED BREEDING LOCALITIES OF CURLEW IN
THE DONCASTER DISTRICT - 1961.

Thomas Allis, wrote 'The Curlew is common near Doncaster,' but made no mention of it breeding. According to R. Chislett's *Yorkshire Birds* (1952), 'A few pairs still call in summer about the rough pastures of the Hatfield-Thorne area,' and the same author wrote, in a paper entitled 'On the birds about a part of the southern county boundary of Yorkshire, 1929-39,' 'Some half dozen pairs still nest yearly about Hatfield Moor—a nest was found in 1936, and young birds unable to fly, in 1937.' The first attempt to define the breeding status and distribution of the species within a ten mile radius of Doncaster, appeared in the *Report of the Birds of the Doncaster District—1951-5*, where J. S. Trimmingham recorded it as a 'Summer resident, breeding in several areas, especially in the Hatfield Moor area.' Subsequent breeding was proved only

in 1959—a nest of eggs near Wroot, and three nestlings at Almholme. Additionally, annual reports of the D.D.O.S. for 1958, and '59 listed a few localities east of Doncaster, with pairs present in May and June.

Since no serious attempt appears to have been made to determine the numbers and range of the Curlew during the breeding season, the D.D.O.S. decided to carry out an enquiry within ten miles of Doncaster, with that objective in view.

RESULTS OF THE ENQUIRY. The numbers and locations of Curlews recorded within 10 miles of Doncaster during the breeding season of 1961 are given in the following table.

<i>Locality</i>	<i>Numbers</i>	<i>Dates and Remarks</i>
Plaice Hills	1 pair	Visited May only. Bubbling and alarm calls.
Walden Stubbs	1 pair	Visited May and June. Bubbling and alarm calls.
Fosterhouses	1 pair	May 7th, only visit. Bubbling and courtship flights.
Haywood	1 pair	Visited May only. Bubbling and alarm calls.
Shirley Pool	2 pairs	Several dates. April-June. Alarm calls.
Kirk Bramwith	2 pairs	Visited March 31st only. Possibly bred last year.
Almholme	5 pairs	Many dates. One chick seen and one egg found.
Lindholme Airfield	1 pair	May and June. Bubbling and alarm notes.
Hatfield Moor	3 pairs	April-June. Bubbling and alarm calls.
Holmewood Grange	1 pair	May-June. Calling often.
Tunnel Pits	1 pair	Visited May only. Calling frequently.
Wroot	1 pair	Visited April-May. Bubbling and alarm calls.
Armthorpe	1 pair	April-June. Bubbling often.
Potteric Carr	3 pairs	Many dates. April-June. Bubbling and alarm notes.
Auckley Common	2 pairs	April-June. Several observers. Bubbling and alarm calls.
Blaxton Common	1 pair	March-June. Calling frequently.
Kelsey Close	1 pair	Two young seen in May.
Bull Hassocks	1 pair	Two young seen in May.
Idle Stop	2 pairs	Several observers. March-June. Bubbling and alarm calls.
Everton Carr	1 pair	March-June. Several observers. Bubbling and alarm calls.
Total—32 pairs in 20 localities		

TOPOGRAPHY IN THE DISTRICT. The larger part of the area in which the enquiry took place is situated in the south of Yorkshire, with small sections of the neighbouring counties of Lincolnshire and Nottinghamshire straddling the boundary line from points east to south. A glance at a map of the district shows that an imaginary line drawn across the whole area from north-north-west to south-east, and passing through Doncaster, approximately separates two distinct topographical regions. The eastern half is low-lying and mainly less than 30 feet above sea-level. Much of it is arable or rough grazing land, interspersed with moor and marsh, and many localities are subject to flooding. From the imaginary line westward the land immediately takes on a different character, rising sharply to heights of 400 feet above sea-level in a number of places. Most prominent is the Magnesian Limestone outcrop which, running northward from Roche Abbey, flanks part of the Don Valley and the whole of the Dearne Valley and continues in diminishing heights almost to the north-west point of the boundary.

METHODS. The methods employed to conduct the enquiry were as follows: members were issued with a leaflet explaining the objects of the enquiry, the information required, and the difficulties liable to be met with. These were listed as the presence of late spring and early autumn migrants which, together with well hidden nests and young, and the problem of obtaining permission to visit cultivated land, could seriously influence results. To alleviate these problems it was decided that if concrete proof was unobtainable, breeding would be accepted as having taken place if pairs were present in the same localities from April to the end of June, and which showed excessive alarm when approached (since it is well known that the species is very demonstrative when disturbed from eggs or young). Particular attention was given to the eastern half of the district where Curlews were known to occur most regularly, and a number of Society members agreed to visit specified localities as often as possible to collect the necessary information.

CONCLUSION. Spring and autumn passage of Curlews in 1961 followed a similar pattern to previous years, with early arrivals noted in February and movement continuing to early May. Returning migrants were not recorded until the last week of June. Thus a period of six to eight weeks ensued when the district was comparatively free of obvious birds of passage, and although several areas had pairs present continuously from late March and early April, it was during these critical months of May and June that 24 pairs were proved beyond doubt to be residents. Due to lack of visits by observers, rather than any other reason, the remaining eight pairs were not recorded in any locality for longer than one month, but their behaviour indicated that they were residents and not migrants. Despite the majority of pairs being reported as very demonstrative when approached, particularly in May and June, conclusive proof of breeding was obtained for only three pairs, with the discovery of a fresh egg in a waterlogged field in April, indicating attempted breeding by a fourth pair.

It is evident from this survey that the range of summer residents is restricted to almost the whole of the eastern half of the Doncaster district, with occurrences on the west-side being purely migratory. The selected habitats showed an obvious similarity; all were at heights of 30 feet or less above sea level, and consisted of areas of damp, coarse, meadow or grazing land, mixed with patches of reeds and sedges, or areas of peaty marshland. The absence of the species on the west side may be due to the different types of habitat influenced by the dominant limestone character, and its height, and the fact that the only damp or marshy areas supporting semi-aquatic vegetation are constricted in the narrow valleys of the Don and the Dearne, which are heavily built over by industrial concerns.

In conclusion it can be stated that the objects of the enquiry were fully realised. For the first time it has been possible to obtain a satisfactory count and to estimate the range of summering Curlew within a 10 mile radius of Doncaster. Sufficient evidence has been collected to indicate that far more pairs breed than the small number of proven records in 1961 and previous years suggests, although the presence of non-breeding residents cannot be overlooked. It is hoped that these results will serve as a basis for future investigation.

ACKNOWLEDGEMENTS

The carrying out of this enquiry has only been possible through the willing help of the following members who took part: J. Burley, C. J. Burbanks, R. Butler, R. F. E. Butler, K. Bescoby, J. Bescoby, I. Boyes, B. Chamblor, W. G. Dye, J. D. Gelder, T. Grant, M. Hanson, R. P. Jackson, W. N. Loseby, R. Moat, A. E. Platt, R. J. Rhodes, J. Steadman.

[A few pairs of Curlews inhabited the Hatfield Chase-Thorne Waste area when I first went there in 1906, but I would not then have suspected as many as 32 pairs. Old histories in my possession do not mention the species although Swan, Heron, waterfowl and moor-buzzard (Marsh Harrier) are mentioned. Porosity of limestone might affect the Curlew's distribution if it resulted in drainage without leaving marshy places. Altitude up to 2,000 feet certainly would not. I would suspect the Curlews now breeding east of Doncaster to be of the same stock as have probably bred in the area since before the great drainage schemes of the 17th Century, when wild-fowling was a staple industry of the district.—R.C.]

J. J. MARSHALL'S BRYOLOGICAL COLLECTION

MARK R. D. SEAWARD

JOSEPH JEWISON MARSHALL (1860-1934), a chemist, resided in Market Weighton and Beverley, Yorkshire, and in Grimsby, Lincolnshire (1909-1916), before moving to Hampshire. For a time he held the post of Honorary Secretary to the Bryological Committee of the Yorkshire Naturalists' Union, and was responsible for the compilation of the appendix on mosses in Robinson's *Flora of the East Riding of Yorkshire* (1902).

Recently, Mr. A. A. Bullock of Kew generously donated a bryophyte collection to the Lincolnshire Naturalists' Union which includes material collected by Marshall, mainly from the Market Weighton area; and together with the material already in the possession of the Lincolnshire Naturalists' Union and the author, a more representative collection of Marshall's mosses has been assembled.

This bryophyte material includes many of the records published by Marshall in *The Naturalist* between 1893 and 1911. The extent of Marshall's bryophyte material, other than that from Yorkshire and Lincolnshire, is unknown, but his main collection, which was housed in the Hull Museum (see *The Naturalist*, 1934, 209), perished during the Second World War.

The following list of specimens in the Lincolnshire and the author's herbaria will, I trust, meet the needs of future workers. The nomenclature is that of Richards and Wallace (appendix to *Trans. Brit. Bryol. Soc.*, **1**, i-xxxii, 1950), and in each instance the locality, with Watsonian vice-county number in parenthesis, and date of the collection are indicated. Six records for Newport are not assigned to a vice-county as I am uncertain to which of the several towns of that name they refer. I have also been unable to trace the location of Pound Worth Hill. Specimens in Herb. Bryol. Lincolnensis are indicated by (‡), and those in Herb. Bryol. Seaward by (†). In many instances a reference to a published source is given. A more comprehensive bibliography is given in conclusion.

SPHAGNA:

There are no specimens of *Sphagnum* spp. in either collection.

TRUE MOSSES:

Polytrichales:

Polytrichum nanum Hedw. (61) Market Weighton, January 1891†.

P. alpinum Hedw. (69) Near Ullswater, c. 1912†.

P. piliferum Hedw. (61) Holme Wood, February 1896†.

P. juniperinum Hedw. (62) Castle Howard Park, April 1895†.

P. alpestre Hoppe (61) Allerthorpe Common, September 1894††.

P. formosum Hedw. (54) Scotton Common, June 1914†.

P. commune Hedw. (61) Holme Wood, June 1896†.

Fissidentales:

Fissidens viridulus (Web. & Mohr) Wahl. (54) Stallingborough, 1916†.

F. viridulus var. *lylei* Wils. (54) Irby Dale, March 1915†; (61) Chalk-pit, Market Weighton, April 1898†; (61) Westwood, March 1900 (see *The Naturalist*, 1901, 66)†.

F. incurvus Starke ex Web. & Mohr (54) Grimsby, March 1912†.

F. exilis Hedw. (54) Weelsby Carr Wood, March 1913†.

F. osmundoides Hedw. (69) Ullswater, c. 1912†.

F. cristatus Wils. (?) Newport, June 1914†.

Dicranales:

Ditrichum heteromallum (Hedw.) E. G. Britton (100) Isle of Arran, September 1891†.

Seligeria paucifolia (Dicks.) Carruth. (61) Goodmanham, May 1898†.

S. calcarea (Hedw.) B. & S. (61) Goodmanham, September 1894 and May 1898 (see *The Naturalist*, 1894, 348)†.

Dicranella rufescens (Sm.) Schp. (11) Lyndhurst, November 1932†.

Dicranum bonjeani De Not. (54) Linwood, 1913†; (61) Wood River Head, Market Weighton, June 1897†; (62) Terrington Carr, June 1898†.

D. rugosum Brid. (54) Linwood Warren, June 1914 (see also *The Naturalist*, 1896, 173)†.

Dicranales—cont.

- D. spurium* Hedw. (54) Scotton Common, June 1914‡; (61) Holme Wood, February 1896‡‡.
Dicranodontium denudatum (Brid.) E. G. Britton (64) Ingleborough, September 1911‡.
Campylopus flexuosus (Hedw.) Brid. (54) Linwood, June 1914‡.
Leucobryum glaucum (Hedw.) Schp. (11) New Forest, 1929, c. fr. ‡‡.

Pottiales:

- Ecalypta streptocarpa* Hedw. (62) Wass Woods, Byland Abbey, September 1892‡.
Tortula intermedia (Brid.) Berk. (?) Newport, January 1916‡; (24) Gt. Linford, March 1916‡.
T. papillosa Wils. ex Spruce (54) Theddlethorpe, May 1913‡.
T. marginata (Bry. Eur.) Spruce (62) Castle Howard Park, April 1895‡; (?) Newport, June 1917‡.
T. vahliana (Schultz) Wils. (54) Specimen for Cleethorpes, May 1911 in Herb. Brit. Bryol. Soc. (see also *The Naturalist*, 1911, 238).
Aloina rigida (Hedw.) Kindb. (?) Newport, c. 1914‡.
A. aloides (Schultz) Kindb. (54) Near Grimsby, October 1912‡; (62) Near Cayton Bay, March 1894‡.
Pottia lanceolata (Hedw.) C.M. (61) Beverley Westwood, May 1898‡.
P. heimii (Hedw.) Fühnr (54) Humber bank, Grimsby, April 1912‡.
P. wilsoni (Hook.) B. & S. (1) Marazion, March 1891‡.
P. starkeana (Hedw.) C.M. var. *brachyodus* Wils. (54) Humber bank, Grimsby, April 1911 (see *Lincs. Nat. Union Trans.*, 15, 120)‡.
P. bryoides (Dicks.) Mitt. (61) Brickyard, Market Weighton, June 1891‡.
Phascum curvicolleum Hedw. (54) Tetney, March 1926‡; (61) Walkington Wold, Beverley, September 1912‡.
Barbula hornschiiana Schultz (54) Cleethorpes, March 1914 (see also *The Naturalist*, 1898, 240)‡.
B. fallax Hedw. (61) Ballast pit, Market Weighton, March 1894‡.
B. rigidula (Hedw.) Mitt. (61) Market Weighton, September 1891‡; (?) Newport, February 1916‡.
B. tophacea (Brid.) Mitt. (61) Goodmanham, March 1898‡.
B. recurvirostris (Hedw.) Dix. (61) Pulfin, April 1909‡.
Gymnostomum aeruginosum Sm. (64) Ingleborough, September 1911‡.
Gyroweissia tenuis (Hedw.) Schp. (54) Weelsby Hall, 1911 (see *Lincs. Nat. Union Trans.*, 15, 40)‡.
Eucladium verticillatum (With.) B. & S. (61) Goodmanham Mill, September 1899 (see *The Naturalist*, 1900, 239)‡.
Tortella tortuosa (Hedw.) Limpr. (64) Ingleborough, September 1911‡.
Weissia microstoma (Hedw.) C.M. (54) Scotter, 1912‡; (61) Brough's Wood, Market Weighton, May 1891‡; (61) Goodmanham, May 1899‡.
W. microstoma var. *brachycarpa* (Nees & Hornsch.) C.M. (61) Beverley Parks, Cottingham footpath, May 1909‡.
W. crispa (Hedw.) Mitt. (61) Market Weighton, July 1895 (see *The Naturalist*, 1893, 164‡; (61) Goodmanham, November 1895‡ and May 1898‡‡).

Grimmiales:

- Rhacomitrium fasciculare* (Hedw.) Brid. (100) Lamplash, Isle of Arran, September 1891‡.

Funariales:

- Physcomitrella patens* (Hedw.) B. & S. (54) Laceby, September 1913‡ and November 1913 (see also *The Naturalist*, 1898, 240)‡.
Ephemenum serratum (Hedw.) Hampe (61) Market Weighton, March 1896‡; (61) Beverley Parks, May 1909‡; and March 1910‡.
E. serratum var. *angustifolium* B. & S. (61) Market Weighton, October 1897‡.
Splachnum ampullaceum Hedw. (11) Lyndhurst, June 1931‡; (11) Denny bog, New Forest, June 1933‡.

Tetraphidales:

- Tetraphis pellucida* Hedw. (54) Caistor, April 1914‡.

Eubryales:

- Pohlia nutans* (Hedw.) Lindb. (64) Ingleborough, September 1911†.
P. rothii (Correns) Broth. (54) Scawby, June 1913 (see *Lincs. Nat. Union Trans.*, **15**, 40)†.
Bryum pendulum (Hornsch.) Schp. (61) Ballast pit, Market Weighton, June 1892†.
B. inclinatum (Brid.) Bland. (61) Ballast pit, Market Weighton, October 1893† and June 1894†.
B. pallens (Brid.) Röhl (61) Holme Wood, October 1895†.
B. pseudotriquetrum (Hedw.) Schwaegr. (65) Aysgarth Force, May 1893†.
B. capillare Hedw. (61) Spurn, August 1898† and June 1914†.
Mnium punctatum Hedw. (61) Market Weighton, April 1893†; (64) Thorp Arch, April 1897†.
Philonotis fontana (Hedw.) Brid. (69) Ullswater, c. 1912†.

Isobryales:

- Orthotrichum anomalum* Hedw. (61) Goodmanham, March 1893†; (65) Leyburn, May 1893†.
O. lyelii Hook. & Tayl. (11) New Forest, c. 1930†.
O. pulchellum Brunton (54) Irby, May 1915†.
Climacium dendroides (Hedw.) Web. & Mohr (?) Pound Worth Hill, September 1912†.
Cryphaea heteromalla (Hedw.) Mohr (11) New Forest, August 1930†.
Leucodon sciuroides (Hedw.) Schwaegr. (61) Londesbrough Park, March 1892†; (61) Goodmanham, May 1909†.
Neckera crispa Hedw. (62) Wass Woods, Byland Abbey, September 1892†.
Homalia trichomanoides (Hedw.) B. & S. (54) Aylesby, 1913†.
Thamniium alopecurum (Hedw.) B. & S. (65) Thorsgill, Eggleston Abbey, June 1892†.

Hookeriales:

- Hookeria lucens* (Hedw.) Sm. (11) Surrey Down, November 1932, c. fr.†.

Hypnobryales:

- Myurella julacea* (Schwaegr.) B. & S. (64) Ingleton, 1912†.
Leskea polycarpa Hedw. (?) Newport, June 1916†.
Thuidium philiberti Limpr. (54) Limber chalk-pit, 1912 (see *Lincs. Nat. Union Trans.*, **15**, 122)†.
Campylium stellatum (Hedw.) Lange & C. Jens. (54) Scotton Common, June 1914†; (61) Market Weighton, September 1898†.
C. protensum (Brid.) Kindb. (61) Market Weighton, March 1894†.
Leptodictyum riparium (Hedw.) Warnst. (54) Freshney bog, April 1911†; (65) Wensley, May 1893†.
Amblystegium serpens (Hedw.) B. & S. (61) Market Weighton, May 1894†.
A. juratzkanum Schp. (54) Holm Hill, Grimsby, 1912 (see *Lincs. Nat. Union Trans.*, **8**, 88)†.
Drepanocladus aduncus (Hedw.) Warnst. (54) Theddlethorpe, 1915†.
Hygrohypnum luridum (Hedw.) Jennings (61) Market Weighton, July 1892†.
Acrocladium giganteum (Schp.) Richards & Wallace (54) Holm Hill brick-pit, 1910†; (54) Weelsby brickyard, April 1911†; (54) Heneage Road brickyard, Grimsby, May 1912† and July 1912†.
A. cuspidatum (Hedw.) Lindb. (54) Freshney bog, May 1911†.
Isoetecium myurum (Brid.) Brid. (11) New Forest, February 1930†.
I. myosoroides Brid. (69) Ullswater, c. 1912†.
Brachythecium albicans (Hedw.) B. & S. (54) Humberstone, 1912††.
B. glareosum (Bruch) B. & S. (61) Oven Wood, May 1909†.
B. rutabulum (Hedw.) B. & S. (54) Irby, November 1907†; (54) Grimsby docks, January 1912†.
B. populeum (Hedw.) B. & S. (54) Freshney bog, April 1912† and March 1915†.
B. plumosum (Hedw.) B. & S. (65) Barnard Castle, June 1892†.
Cirriphyllum piliferum (Hedw.) Grout (54) Bradley, April 1912†.
Eurhynchium striatum (Hedw.) Schp. (11) New Forest, 1930†.
E. swartzii (Turn.) Curn. (11) Minstead, February 1931†; (54) Weelsby Carr Wood, February 1913† and November 1913††; (54) Aylesby bog, November 1913†.

- E. speciosum* (Brid.) Milde (54) Weelsby Carr Wood, February 1914†† and March 1914†.
- E. riparioides* (Hedw.) Jennings (61) Scott's Croft, Market Weighton, December 1890†.
- E. murale* (Hedw.) Milde (61) Market Weighton, December 1892†.
- Rhynchostegium pallidirostra* (A. Br.) Loeske (54) Weelsby Wood, February 1914† and March 1915†.
- Entodon orthocarpus* (La Pyl.) Lindb. (61) Skidby chalk-pit, November 1909†.
- Pseudoscleropodium purum* (Hedw.) Fleisch (11) Iron's Hill, Lyndhurst, September, 1932†.
- Pleurozium schreberi* (Brid.) Mitt. (61) Holme Wood, February 1898.
- Hypnum cupressiforme* var. *ericetorum* B. & S. (61) Wood River Head, Market Weighton, May 1891†.
- H. imponens* Hedw. (11) Arrisdown, Emery Down, 1930†.
- H. patientiae* Lindb. (11) Emery Down, December 1932†.
- Rhytidium rugosum* (Hedw.) Kindb. (64) Ingleborough, 1912†.

HEPATICES:

Marchantiales:

- Preissia quadrata* (Scop.) Nees. (54) Scotton, June 1913†.

Metzgeriales:

- Metzgeria furcata* (L.) Dum. (11) Longwater, Lyndhurst, October 1932†.
- Fossombronia foveolata* Lindb. (11) Lyndhurst, 1927†.
- F. wondraczekii* (Corda) Dum. (11) Lyndhurst, September 1933†.

Jungermanniales:

- Cololejeunea minutissima* (Sm.) Schiffn. (11) Lyndhurst, May 1931†.

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YORKSHIRE NATURALISTS' UNION EXCURSIONS IN 1962

BOLTON ABBEY, V.C. 64, May 26th

The first excursion of the year was well attended and enjoyable in spite of the cold wind and cloudy sky. Forty-seven members and friends were present when the party set out and by tea-time more had arrived and the total attendance was about sixty. Tea and the meeting which followed were held in the Parish Room, Bolton Abbey, by kind permission of the Rector, the Rev. G. G. Griffiths. In the absence of the President and any Vice-President, the chair was taken by Mr. Flint. Sixteen affiliated Societies answered the roll-call. Votes of thanks to the Divisional Secretary, landowner and Mr. Griffiths were proposed and twenty-eight new members and two affiliated Societies were elected.

Ornithology (D. F. Walker): It was a rather cheerless morning when we met at the Hole-in-the-Wall but the sight of a splendid cock Grey Wagtail, as we crossed the Wharfe from the Priory, the whistle of a Nuthatch and the sight of a male Pied Flycatcher, displaying to his mate on a bough over the entrance to Bolton Woods, made us feel that we were in for a good day. In the woods, Garden-Warbler and Blackcap, Chiffchaff and Wood-Warbler were singing but the Willow-Warbler was silent. Great and Blue-Tits were numerous and several Tree-Creepers were seen and as we came to a meadow opposite the Cavendish Pavilion the sun broke through and almost at once the place was alive with hosts of Swallows, House-Martins, Sand-Martins and Swifts, skimming over the steaming ground. On the way to Pickles Beck Ford, Carrion Crow, Rook, Linnet, Pied Wagtail and Bullfinch were noted and at the bridge the nests of Dipper and Wren were examined as was that of a Tree-Pipit in the undergrowth nearby. In the fir plantations, Goldcrest and Coal-Tit were numerous and a flock of Mistle-Thrushes was flushed at one point. Tawny Owl, Wood-Pigeon and Pheasant were also noted. Following the course of the beck we came to an area containing some old oaks and here a party of Long-tailed Tits flitted about the branches like a shoal of feathered tadpoles. In the same trees, Redstart, Spotted Flycatcher, Greenfinch and Yellowhammer showed themselves.

And so to the head of the Valley of Desolation and back to Simons Seat, with good views of Short-eared Owl quartering the moor, Ring-Ousel, Red Grouse, Golden Plover and Kestrel. Curlew, Meadow-Pipit and Skylark were also much in evidence here but Merlin was looked for without success. Back in Bolton Woods, we noted how Starlings were apparently nesting in every suitable hole and wondered if that was the reason for the paucity of Woodpeckers, for only one was seen during the whole day (Great-Spotted Woodpecker). It was also surprising that only two pairs of Lapwing were seen. Returning along the riverside to the Priory, Common Sandpiper, Water Hen, Yellow Wagtail, Black-headed Gull, Lesser Black-backed Gull and Mallard were added to the list, giving a total for the day of 64 species. (Birds seen but not mentioned above were: Robin, Chaffinch, Blackbird, Song-Thrush, Cuckoo, Dunnock, Jackdaw, Partridge, Sedge-Warbler, Whitethroat, Wheatear, Tree-Sparrow and House-Sparrow.)

Entomology (J. H. Flint): Few insects were to be expected on a heavily overcast day with a cold north wind and few insects were seen. The season being a very late one, and the preceding days having been cold with strong winds, the insects were keeping very low in the vegetation and sweeping produced little. All orders were scarce. Three common species of bumble-bee were almost the only active insects and they were sluggish. Among the more conspicuous insects were several examples of the scorpion-fly *Panorpa germanica* L. and Mr. Walker produced a female Ruby Tiger moth which obligingly laid a batch of eggs in a match box. The area is a very good one for stone-flies and I took *Brachyptera risi* (Morton), *Amphinemura cinerea* (Ol.), *Leuctra inermis* Kemp., *Chloroperla torrentium* (Pict.) and *Isoperla grammatica* (Poda), all common species of rapid, stony streams and rivers. Only fourteen species of beetle were seen and these included the expected *Nebria gyllenhalii* (Schoen.) and *Bembidion tibiale* (Duft.) from the river side, while among those swept from vegetation were *Epuraea melanocephala* (Marsh.), *Malthodes marginatus* (Lat.) and, the commonest beetle, *Phyllobius viridicollis* (F.). The Hemiptera were represented by a very few common species and Mrs. Flint found a larva of the shield bug *Pentatoma rufipes* (L.) on an oak.

Sawflies were collected by Mrs. Flint and these also were extremely scarce. Among those taken were *Dolerus aeneus* Hart., *D. gonager* Fab., *Stromboceros delicatulus*

(Fall.), *Fenusa ulmi* Sund. and *Aglaostigma fulvipes* (Scop.). Mr. R. Crossley had little success collecting hoverflies and only four common species, *Platychirus albimanus* (Fab.), *Melanostoma ambiguum* (Fall.), *M. scalare* (Fab.) and *Syrphus ribesii* (L.) were taken. The most notable fly was the conspicuous *Rhagio notata* Mg. (det. L. N. Kidd) which was taken by the river. Not a single butterfly was seen.

Conchology (E. Dearing): Collecting from the river and north-eastern bank as far as the Strid yielded few species of which I consider a colony of *Succinea* feeding on Campion to be really fine.

The following species were recorded:

In river: <i>Lymnaea peregra</i> (Müller)	<i>Ancylus fluviatilis</i> (Müller)
On land: <i>Succinea putris</i> (L.)	<i>Discus rotundatus</i> (Müller)
<i>Clausilia bidentata</i> (Strom.)	<i>Arion ater</i> L. agg.
<i>Arianta arbustorum</i> (L.)	<i>Oxychilus cellarius</i> (Müller)
<i>Helix hortensis</i> Müller	<i>O. alliarius</i> (Müller)
<i>H. nemoralis</i> L.	<i>Agriolimax agrestis</i> L. agg.
<i>Hygromia striolata</i> (C. Pfeiffer)	

The scanty number of species found is due to the speed at which the party had to move. The Valley of Desolation was not visited, the main party having moved past.

Flowering Plants (R. E. Collins): The effects of the late spring were all too obvious. Plants seemed to be two or three weeks behindhand although some seemed to be flowering quite normally. The botanists walked beside the Wharfe up to the Valley of Desolation and spent most of the afternoon in this valley. The area covered was mainly woodland with a little open pasture. One hundred and sixty plants were recorded, including a number of species mentioned in the leaflet, notably *Ranunculus auricomus* (Goldilocks), *Cochlearia alpina* (Alpine Scurvy-grass) (in a number of places on the bank of the Wharfe), *Stellaria nemorum* (Wood Chickweed), *Geranium sylvaticum* (Wood Cranesbill), *Prunus padus* (Bird Cherry) (which made a fine show especially in the Valley of Desolation), *Rubus saxatilis* (Stone Bramble), *Ribes spicatum* (Rock Currant) (a few shrubs found in the woods), *Myrrhis odorata* (Sweet Cicely), *Asperula odorata* (Woodruff), *Crepis paludosa* (Marsh Hawksbeard), *Lathraea squamaria* (Toothwort), *Myosotis sylvatica* (Wood Forget-me-not), *Paris quadrifolia* (Herb Paris), *Melica nutans* (Wood Melic), *Thelypteris dryopteris* (Oak Fern) (two good stands were found on either side of the Valley of Desolation), *T. phegopteris* (Beech Fern) (found in one place in the Valley of Desolation where also was found a good stand of *T. oreopteris* (Mountain Fern). *Equisetum telmateia* (Giant Horsetail) occurred in several wet flushes. The lateness of the season no doubt explains why a number of plants were not found and a more detailed examination of the abbey ruins and surrounds than was possible in the time available would doubtless add a number of species.

Nomenclature follows Dandy's *List of British Vascular Plants*.

SALTBURN, V.C. 62, June 9th-11th

A June Whitsuntide seemed the ideal time for a meeting on the north-east coast, but unfortunately the late season and the cold blustery weather combined to make conditions poor for all sections. Nevertheless some good work was done and all present enjoyed the excursion. Twelve affiliated Societies were represented at the meeting held at the end of the excursion.

Vegetation on the exposed cliff top was seared and battered by the strong winds which had been persistent over a considerable period and the party on Saturday morning was glad to seek the shelter of the wooded gill where conditions were more suitable for all sections. Sunday's excursion to the Kilton gills was led by the head keeper, who took the party to the most interesting parts of the area and had worked out a very good route through both mature and newly-planted woodland, ending at the ruined castle. On Monday the marshes and dunes at Teesmouth were visited and the complete change of habitat added a number of species to the lists of all sections.

Ornithology (R. Chislett): The areas mentioned in the *Circular* were duly visited. Hunt Cliff showed breeding Fulmars, Herring Gulls, Cormorants, Jackdaws and House-Martins. The pipits denied views close enough for definite identification as Rock-Pipits. Pigeons were numerous with plumage variations; I only saw one

that was almost Rock-Dove. Oystercatchers were in a party at the base. Jackdaws were everywhere, and Lapwings were in flock.

Several wooded gills were explored resulting in Green Woodpecker (the keeper said the two other species were present near Kilton), Tawny Owl, Cuckoo, Magpie, Tree-Creeper, Great, Blue and Marsh Tits, Redstart, Blackcap (nest found), Garden Warbler, Wood Warbler, Spotted Flycatcher, Tree-Pipit, Bullfinch; whilst Wren, Song-Thrush, Blackbird, Willow Warbler, Starling and Chaffinch were plentiful. Kilton Woods had largely been replanted since the war and the area of old timber was not extensive.

Warrenby and Coatham Marshes (largely dry and much overlaid by ancient slag) had many Skylarks and Reed-Buntings (nest found), and at least one Wheatear. On the nearby coast a pair or two of Ringed Plovers and Little Terns were attempting to breed; and Sanderlings to the number of *c.* 40 were still present.

Other species noted were: Mute Swan (with cygnets), Partridge and Pheasant, Moorhen, Golden Plover (one), Woodcock Greater Black-backed Gull (immatures), Kittiwake, Sandwich Tern, Wood Pigeon, Swift, Swallow, Carrion Crow, Rook, Robin, Whitethroat, Hedge-Sparrow, Meadow-Pipit, Pied and Yellow Wagtails, Greenfinch, Linnets, Yellowhammer. Many other places could have been explored with advantage. The background moors we did not reach or the list would have been longer.

MAMMALS, ETC. (R.S.A.): Rabbit droppings were seen on Huntcliff on Saturday. On the waste land at Warrenby a stream contained the body of a dead Fox. Around this were masses of tadpoles. A Rat was seen running along the bank and a Weasel noticed as it disappeared into a hole. Many holes of Water Voles were noted. A common Toad was seen in the stream in Saltburn Woods.

Entomology (R. S. Atkinson): Saturday was sunny and warm so a few butterflies were noted on Huntcliff. These included the Small Cabbage White (*Pieris rapae*), the Meadow Brown (*Maniola jurtina*), and Red Admiral (*Vanessa atalanta*). Of beetles there were seen the 10-spot ladybird (*Adalia decempunctata*), 7-spot ladybird (*Coccinella septempunctata*), and 2-spot ladybird (*Adalia bipunctata*). Underneath a stone on waste land a fine specimen of the Devil's Coach-horse beetle (*Ocyptus elens*) was taken. On the Sunday a Dor beetle (*Geotrupes stercorarius*) was picked up on the roadside at Marske. On Monday waste land at Warrenby yielded the Small Cabbage White again and the Small Heath butterfly (*Coenonympha pamphilus*). Feeding on Bird's Foot Trefoil (*Lotus corniculatus*) were caterpillars of the Common Blue butterfly (*Polyommatus icarus*).

Conchology (Mrs. E. M. Morehouse): The woods in the Saltburn district were remarkably free from fallen timber both large and small, and this made the collecting of molluscs difficult. The weather over the previous weeks too had been poor.

Seventeen species were noted, viz. *Oxychilus cellarius* (Müller), *O. alliaris* (Miller), *Retinella pura* (Alder), *Clausilia bidentata* (Strom.), *Marpessa laminata* (Montagu), *Helix nemoralis* L., *H. aspersa* Müller, *Discus rotundatus* (Müller), *Columella edentula* (Drap.), *Succinea elegans* Risso, *Arion ater* var. *atterima* and var. *plumbea* Roebuck, *Limax maximus* L., *Agriolimax agrestis* (L.), *A. laevis* (Müll.), *Helicella virgata* (Da Costa), *H. capevata* (Montagu).

Miss Rob and Miss Walker collected a few marine species between Saltburn and Marske of which all but one were dead, but they gave an indication of the molluscs to be found in this area. *Tellina tenuis* Da Costa (live), *Solen ensis* L., *Mytilus edulis* L., *Cardium edule* L., *Pholas crispata* L., *Anomia ephippium* L., *Venus striatula* Da Costa (*Gallina*), *Donax vittatus* Da Costa, *Littorina littorea* L., *L. littoralis* L. (*obtusata*).

Flowering Plants (C. M. Rob): Three very different habitats were visited, but the cold wind and generally unpleasant weather conditions made the visit to the cliffs around Huntcliff a short one and by lunch-time on Saturday morning everyone was ready to leave the open country for the shelter of Saltburn Gill.

Little of interest was seen during the morning's walk. A few plants of *Sagina maritima* (Sea Pearlwort), were noted in the crevices of the steps down to Old Saltburn; and near one of the ornamental gardens *Papaver lateritium* (Orange Poppy) was established and competing successfully with the native vegetation. *Genista tinctoria* (Dyer's Greenweed) was fairly abundant by the path up the cliff and in some of the grassland round about *Foeniculum vulgare* (Fennel) and *Conium maculatum* (Hemlock) were noted growing near the Coastguard's cottages. Perhaps

the most interesting plant of this part of the excursion was *Rosa rubiginosa* (Sweetbriar) which was the common rose of the scrubland on the cliffs and the roadside hedges.

In the grass fields between the main road and Saltburn Gill, *Alchemilla xanthochlora* (which also grew in the woodland rides) and *A. vestita* were seen and *Reseda alba* (White Mignonette) was in good flower by the side of the Brotton road. In the wood the following were noted: *Vicia sylvatica* (Wood Vetch), *Carex pendula* (Drooping Sedge) which was very fine by the streamside, and *Crepis paludosa* (Marsh Hawksbeard). *Equisetum telmateia* (Giant Horsetail) was abundant in several places and what must rank as one of the best plants seen on the whole excursion, a fine patch of *E. hyemale* (Dutch Rush) was shown to the party by its discoverer, Mr. Seaward.

Sunday's visit to the woods at Kilton gill took the party to one of the less worked 10 km. squares and they were able to add 38 new species, although no outstandingly rare plants were seen. *Neottia nidus-avis* (Bird's Nest Orchid) was a pleasing sight. Although recorded from many localities this is by no means common in North Yorkshire. Sweetbriar was abundant, all three *Geums* and *Dryopteris borrieri* (Scaly Male Fern) were common. Both Shield ferns, *Polystichum aculeatum* and *P. setiferum*, *Vicia sylvatica* (Wood Vetch) and *Aegopodium podagraria* (Goutweed), the latter a common garden weed, but rare as a woodland species, were noted after lunch when the party moved into a new square where sixteen new species were added.

On Monday the botanists went to the small area of saltmarsh and damp grassland which is all that is left of Coatham Marshes, and to the dunes and saltings at the mouth of the River Tees. Most of Coatham Marshes has been covered by slag tipped from the nearby steelworks, and much of this part is now dry, almost rocky ground with quantities of *Chamaenerion angustifolium* (Rose-Bay), *Senecio squalidus* (Oxford Ragwort), and *Linaria vulgaris* (Toadflax) in the damper parts. In one of the few ditches *Potamogeton pectinatus* (Fennel Pondweed) and *Ranunculus baudotii* (Water Buttercup) were fairly abundant. *Dactylorhiza purpurella*, the dark purple flowered Marsh Orchid, was seen in one small area before lunch, but several more plants were seen in the dune slacks nearer the South Gare where the party moved after lunch. The alien grass *Bromus inermis*, was well established in a small pool at the edge of the slag tip, where it appeared to have been established for some time. This is a new record for the Vice-County. Other plants noted in the marshes were the two sedges, *Carex extensa* and *C. distans*, and *Glaux maritima* (Sea Milkwort).

The dunes and saltings towards the South Gare were very windswept and most plants were backward. Saltwort (*Salicornia* sp.) was still in the seedling stage, and only the leaves of the Sea Lavender were visible. Some fine patches of *Astragalus danicus* (Milk Vetch) and non-flowering plants of *Blackstonia perfoliata* (Yellowwort), growing with *Carlina vulgaris* (Carlina Thistle) were the most interesting plants noted.

Nomenclature follows Dandy's *List of British Vascular Plants*.

RICHMOND, V.C. 65, June 24th

The meeting at Richmond will be remembered by all who got there as one of the most difficult ever held. There was a very strong wind blowing as members met in the market place and several motorists had had narrow escapes from flying timber even before they had got so far on their way.

In the somewhat sheltered valley conditions were unpleasant, but it was possible to stand upright and notice the flora and fauna of the old quarry where cars were parked. Once the shelter of the low ground was left the wind became so violent that it was almost impossible to stand and the added hazard of flying branches made the trip up Red Scar one which will be remembered for some time. Conditions at the foot of the scar were so bad that any hope of working the area had to be abandoned and the party made for the shelter of the old copper workings, where they lunched and then made their way back to the river bank where some work was possible, but little of the interesting woodland was attempted and the reports of this meeting give small indication of the flora or fauna of this part of the Swale valley.

Tea and the meeting to present the reports of the day's work was at 54 Gilling Road, by invitation of Mrs. Holloway. Mr. Chislett took the chair. Nine affiliated Societies answered the roll-call. Votes of thanks were moved to the landowners

by Miss Shaddick, Mrs. Holloway by Miss Rob, and the Divisional Secretary by the Chairman.

Ornithology (R. Chislett): The most noticeable feature of the day was the gale that kept birds low and quiet. We tried to explore the terrain between the Swale and the Downholme to Hudswell Road. The air was quietest and most birds were seen along the treed banks of the river. Features were: Redstarts, Tree-Pipits, and Swallows with young on branches where they were being fed; six Blackcaps singing in different places and only one Garden Warbler; Swifts, Sand-Martins, and Swallows all hawking low over the river, and not a House-Martin.

The list of 36 species seen also included Pheasant, several Sandpipers, Black-headed Gull and an immature larger member of the *Laridae*, Wood Pigeon, Carrion Crow, Rook, Jackdaw and one Jay, Great and Blue-Tit, Wren, Song-Thrush, Blackbird, Robin, Whitethroat, Willow-Warbler, Spotted Flycatcher, Hedge-Sparrow, Pied and Grey Wagtail, Chaffinch and Yellowhammer. The high ground beyond the trees and south of Red Scar only showed Skylark, Meadow-Pipit, Curlew, Lapwing and a Wheatear; but was it wind-swept?

Conchology (Mrs. E. M. Morehouse): In spite of the poor conditions, dry ground and the very high wind the following molluscs were recorded amongst the herbage in the more sheltered places:

Helix nemoralis L.

Arianta arbustorum (L.)

Clausilia bidentata (Ström.)

Marpessa laminata (Montagu)

Vitvina pellucida (Müll.)

Oxychilus alliarius (Müll.)

O. cellarius (Müll.) (large)

Retinella pura (Alder)

R. nitidula (Drap.)

Discus rotundatus (Müll.)

Cochlicopa lubrica (Müll.)

Hygromia striolata (C. Pfeiffer)

Monacha granulata (Alder)

Euconulus fulvus (Müll.)

Arion ater L. (very fine)

Milax gagates (Drap.)

Agrolimax agrestis (L.)

Flowering Plants (C. M. Rob): In spite of the gale the botanists managed to reach the scree at the base of Red Scar and were rewarded by a fine show of *Silene maritima* (Sea Campion), but conditions were unsafe for any exploration of the exposed rocks and the party were forced to take the most sheltered route to the river bank where conditions were slightly more suitable for plant hunting. Later in the day when the wind had slackened a small party climbed up to the scars west of Red Scar where several good bushes of *Sorbus rupicola* (Rock Whitebeam) were seen, mostly out of reach, but one small bush had good fruit and was easy to name.

Apart from these two plants little of interest was seen. *Viola lutea* (Yellow Mountain Pansy) was fairly plentiful in the rough field near the old copper workings; *Lathraea squamaria* (Toothwort) and *Geranium sylvaticum* (Wood Cranesbill) were plentiful in the woods near the road. Four species of Woodrush, *Luzula pilosa*, *L. sylvatica*, *L. multiflora* and *L. campestris*, and two Ladies Mantles, *Alchemilla glabra* and *A. xanthochlora*, were noted, the latter very fine and large near the old quarry. *Geum rivale* (Water Avens), *G. urbanum* (Herb Bennet) and the hybrid *G. intermedium* were abundant; *Myosotis sylvatica* (Wood Forget-me-not), *Mercurialis perennis* (Dogs Mercury) and *Allium ursinum* (Ramsons) were common plants of the wooded part of the valley. Although the poor weather conditions necessitated most of the time being spent in the well-known and well-worked woods near the river, seventeen new species were added to the 10 km. square, which is an indication of the work that is still to be done even in the often visited parts of the county.

Nomenclature follows Dandy's *List of British Vascular Plants*.

HORNSEA MERE, V.C. 61, July 7th

Vertebrate Zoology (B. S. Pashby): *Mammals*.—One freshly dead Mole in Boathouse Wood; three or four Hares; one Squirrel, species undetermined.

Amphibians.—Frogs and Toads numerous.

Birds.—As the area has been watched regularly for some years now, the excursion could not be regarded as more than a busman's holiday for local ornithologists. Almost all species known to be there were noted, the biggest disappointment being the non-appearance of the Marsh Harrier.

Most of the wildfowl were gathered at the Wassand end of the Mere, and among them could be seen several Shoveler and Pochard Drakes in 'eclipse' plumage, and a few drake Tufted Ducks in breeding dress. No young were seen, neither of the wildfowl nor of the Great-crested Grebes, of which there were nine. The various 'perches' over the water, viz. the boundary fence across the Mere and the wire fences at the town end, were occupied by an immature Cormorant and about 150 Sand Martins, and the 84 Mute Swans counted were scattered the whole length of the Mere. In the Low Wood a Chiffchaff was singing and a Garden Warbler made itself fairly obvious to ear and eye, but conditions here proved so impenetrable that a beeline was made for Boathouse Wood where another Chiffchaff was heard. Here Coal and Long-tailed Tits were located, Tree-Creeper, Goldcrest and Blackcap either seen or heard. Turtle Doves were heard on the fringes of this wood and Low Wood, and the chorus of Reed and Sedge Warblers accompanied one into the woods, while the Reed Bunting was everywhere. To the south of the Mere Linnets were numerous, a Corn Bunting heard, and Yellowhammers were feeding young. Towards evening, three species of gull flew on to the Mere, Herring, Common, and Black-headed, as well as two Shelduck which flew the full length of the water and continued westwards. The Spotted Flycatcher, several Swallows and a House Martin were seen down Wassand Lane, and together with some other more common species a total of 58 species was noted. The absence of any Raptors brought to mind Bolam's remarks in the *Naturalist* for 1913, 'the Sparrow Hawk is as numerous as the keepers permit it to be'. Another big change, this time from the last excursion here in May 1926, concerns the Reed Bunting, of which it was said, 'a few kept them (Reed and Sedge Warblers) company'. It is difficult to think of a greater concentration of these birds in the county.

Flowering Plants (E. Crackles): Fields, marshes and reed beds at the south side of the Mere were examined. It was good to find that *Ranunculus lingua* (Greater Spearwort) still flourishes in some of the reed beds. *Phragmites communis* is the dominant plant over a large area, but *Calamagrostis canescens* (Purple Small Reed) is locally dominant in some of the reed beds, while *Carex acuta* is also locally common and *Typha angustifolia* is an important species. Other plants noted in the reed beds or adjacent marshy ground included: *Thalictrum flavum* (Meadow Rue), *Hypericum tetrapterum* (Square-stalked St. John's Wort), *Lychnis flos-cuculi* (Ragged Robin), *Epilobium palustre* (Marsh Willow-herb), *E. hirsutum* (Great Hairy Willow-herb), *Hydrocotyle vulgaris* (Pennywort), *Sium latifolium* (Water Parsnip), *Angelica sylvestris* (Wild Angelica), *Lysimachia vulgaris* (Yellow Loosestrife), *Lycopus europaeus* (Gipsywort), *Scutellaria galericulata* (Skull-cap), *Valeriana officinalis* (Common Valerian), *Senecio aquaticus* (Marsh Ragwort), *Carex riparia*, *C. acutiformis*, *C. otrubae*, *C. disticha*, *C. spicata*, *Glyceria maxima* (Reed-grass) and *Phalaris arundinacea* (Reed-grass). A small colony of *Dactylorhiza incarnata* (Early Marsh Orchis) was noted and *Juncus compressus* (Round-fruited rush), known to occur by the Mere, was in flower and found to be more frequent than was previously supposed.

At the margin of the lake, beds of *Hippuris vulgaris* (Mare's tail) and *Scirpus tabernaemontani* (Glaucous Bulrush) were seen. In the vicinity of gravelly mounds in one of the mere-side fields occur *Ononis spinosa* (Spiny Restharrow), *Poterium sanguisorba* (Salad Burnet) and *Plantago media* (Hoary Plantain).

Arable fields near the Mere yielded *Lamium hybridum* which was abundant in one field, while other weeds recorded included: *Ranunculus arvensis* (Corn Crowfoot), *Viola arvensis* (Field Pansy), *Silene noctiflora* (Night Flowering Campion), *Euphorbia helioscopia* (Sun Spurge), *E. exigua* (Dwarf Spurge), *Veronica persica* (Buxbaum's Speedwell) and *Lamium amplexicaule* (Henbit).

Nomenclature follows Dandy's *List of British Vascular Plants*.

BAWTRY, V.C. 63, July 21st-22nd

The last time the Union visited the Bawtry area was in 1902 when the report was extremely brief due to persistent heavy rain having prevented any field work being done. On this occasion, however, the weather co-operated. It was fine and reasonably sunny on both days. In the planning of the week-end it had been found impossible to obtain accommodation nearer than Doncaster and due to the prevalence of vandalism, difficulties and restrictions had arisen when requests were made for permission to visit certain areas. Despite this, more than 40 members

and associates, representing fifteen affiliated Societies, attended on one or other of the two days.

After tea on Sunday a short meeting was held at headquarters, at which Mr. Ralph Chislett presided. Reports were presented by representatives of the Ornithological, Botanical and Conchological Sections. Votes of thanks were moved to the Divisional Secretary, Mr. R. S. Atkinson, who had only been able to attend on the Saturday, and to Mr. R. J. Rhodes of the Doncaster and District Ornithological Society who, in addition to leading the Sunday excursion, had gone to considerable trouble to obtain permission for visits to be made to gravel pits and other habitats in the Blaxton area.

Ornithology (R. Chislett): Our working-ground lay along the county boundaries some distance from Bawtry and nearer to Blaxton. I was glad of the opportunity to revisit parts of an area where I worked rather intensively from 1929 to 1939, and to make comparisons.

The woodlands were mainly intact, but much of my former terrain had been changed by bulldozers. Fields of corn had replaced bush land. Damp land where meadow-sweet had predominated now grew turnips. Derelict gravel-pits had replaced rough grassland. The gravel-pits were most interesting. Some on which gravel extraction had been abandoned twenty-five years ago were now almost impenetrable young woodland, with tall birches and willows hiding the remnants of rush and reed-mace which had early appeared in the wet bottoms (now dry). Some dried-out larger pools were sandy and scarred by rabbit-tracks. Oaks were already of bush size on some of the dry ground and such areas may possibly be oakwood in another fifty years if left alone. The ground was a tangle of bramble and rank grass. Through all this I dragged (metaphorically) a botanist; both of us emerged well scratched about the legs. In that tangle birds were few. Partridges had a brood in a clearing, a Woodcock was flushed, Turtle-Doves and Wood Pigeons called, and there were odd Willow-Warblers and Finches, with Robin, Hedge-Sparrow and Yellowhammer.

Another more recently bulldozed area showed wide expanses of water, where a pair of Mute Swans swam with eight cygnets. Hereabouts were Mallard and Teal, Pochard and Tufted Duck, Moorhen and Coot, Snipe and Redshank with Lapwings in flock, single Ringed Plovers of two species, three species of gull (about 80 Lesser Black-backed, one Common, and many Black-headed), two Common Terns, and a few Reed-buntings and Sedge-Warblers.

The older woods had altered little and had plenty of Turtle-Doves, Bullfinches, Chaffinches, but fewer Willow-Tits. They did, however, produce Tree-Creeper, Blackcap and three Crossbills. Hawks appeared to be absent.

Over the whole area the Whitethroat was the only Warbler seen (the date was late for song) frequently. Finches included Greenfinch, Goldfinch and Linnet. Corn-Buntings were fewer than formerly. Pied and Yellow Wagtails occurred. Partridges of both species had broods. Sixty-five species were identified by a second party led by R. J. Rhodes and included several that did not occur in summer prior to the excavation of the gravel-pits and sand-pits.

Species not mentioned above were: Pheasant, Stock-Dove, Swift, Skylark, three Hirundines, Carrion Crow, Rook, Jackdaw, Magpie, Jay, Great and Blue Tit, Wren, Mistle and Song Thrush, Blackbird, Whinchat (reduced in numbers), Spotted Flycatcher, Meadow and Tree-Pipit, Starling, House and Tree-Sparrow.

Other Records.—The only mammal seen was a Hare. Among amphibians, a Toad was recorded and several young Frogs near a pond in the Tickhill area.

Flowering Plants (R. E. Collins and Mrs. D. E. Haythornthwaite): With several groups of botanists present about 280 species were recorded on the B.S.B.I. cards. On Saturday, a small part of the district lying between Tickhill and Rossington was worked. This included a rough area with sand-pits known as Tickhill High Common, arable land, poor pasture and roadside verges, the latter showing signs that spraying had taken place. In the hedgerows both *Bryonia dioica* (White Bryony) and *Tamus communis* (Black Bryony) were plentiful. Weeds of cultivation such as *Anthemis arvensis* (Corn Chamomile), *Papaver rhoeas* (Corn Poppy) and *P. dubium* (Long-headed Poppy), *Sonchus arvensis* (Corn Sowthistle), \times *Symphonium uplandicum* (Russian Comfrey), *Lycopsis arvensis* (Small Bugloss), *Polygonum lapathifolium* (Pale Persicaria), *P. convolvulus* (Black Bindweed) and robust specimens of *Urtica urens* were noted. Among the more interesting plants of the sand-pits were

masses of *Centaureum erythraea* (Centaury), *Aira caryophyllea* (Silver hairgrass), *A. praecox* L. (Small hairgrass), *Spergularia rubra* (Sand Spurrey) and *Gnaphalium* species. Typical of the more limestone loving species were *Thelycrania sanguinea* (Dogwood), *Acer campestre* (Field Maple) and *Carduus nutans* (Musk thistle).

In ponds in the quarry and near Tickhill were seen *Typha latifolia* (Great Reed-mace), *T. angustifolia* (Lesser Reedmace) and *Scirpus lacustris* (Bulrush), *Alisma plantago-aquatica* L. (Water Plantain) and *Potamogeton natans* L. (Broad-leaved pondweed). The only sedge found was *Carex hirta* (Hairy sedge). By a dyke was a good stand of *Conium maculatum* (Hemlock) and *Eupatorium cannabinum* (Hemp agrimony).

On Sunday, heathy wasteland and a sandy common in the Blaxton area were visited in the morning, where a well-established stand of the alien *Acaena anserinifolia* (Pirri-pirri bur) was found together with *Scleranthus annuus* (Knawel), *Ornithopus perpusillus* (Bird's Foot) and *Eleocharis acicularis*. Several species of Cudweed were again seen and a few plants of *Calluna vulgaris* (Ling). In the afternoon the River Torne and other drains were examined, the most interesting plants found being *Baldellia ranunculoides* (Lesser water-plantain), *Glyceria maxima* (Great Watergrass), *Myriophyllum spicatum* L. (Spiked Water-Milfoil) and *Rorippa islandica* (Marsh Yellow Cress).

On both days many common species such as daisy, dandelion and buttercups escaped detection in the areas surveyed.

Conchology (Mrs. E. M. Morehouse): Most of the collecting was done in the Tickhill area, a habitat where one could always get a good series of *Helix hortensis* Müll., especially var. *lilacina* Taylor. Miss Morehouse found a thrushes' anvil where there were fragments of var. *lilacina* Taylor and var. *incarnata* Moq. Tan.

Two new records for the area were made viz.—*Helicella caperata* Montagu and *Jaminea (Pupa) muscorum* L.

The following were taken chiefly by my daughter:

<i>Helix aspersa</i> Müll.	<i>Monacha cantiana</i> (Montagu)
<i>H. hortensis</i> Müll.	<i>Hygromia hispida</i> (L.)
<i>Discus rotundatus</i> (Müll.)	<i>Helicella caperata</i> (Montagu)
<i>Cochlicopa lubrica</i> (Müll.)	<i>Linnaea peregra</i> (Müll.)
<i>Pupilla muscorum</i> (L.)	<i>Limax maximus</i> L.
<i>Vitrina pellucida</i> (Müll.)	<i>Arion subfuscus</i> v. <i>furusculus</i>
<i>Retinella nitidula</i> (Drap.)	<i>A. hortensis</i> Fer.
<i>Oxychilus cellarius</i> (Müll.)	<i>Agriolimax agrestis</i> (L.)
<i>O. alliarius</i> (Müll.)	

FLOWERING PLANT SECTION MEETING AT LOFTHOUSE IN NIDDERDALE, July 29th

The Sectional Meeting was attended by about twenty members, and although the weather was not good, the rain kept off for most of the day, and the route chosen was well sheltered from the strong wind. Leaving the cars in the Howstean car-park, the party by-passed the well-known and well-worked part of Howstean Gill, entering the gill about half a mile above Stean village. The gill here is narrow and deep with steep sides and much of it is densely shaded. The going was rough and not more than two miles were covered in the four-hour walk. The party was lucky that the river was low, for otherwise it would have been impossible to cover much of the route.

In the *Atlas of the British Flora*, the square visited is given as having under 250 species recorded. This visit and the ones made by our secretary while making the arrangements, added 96 species and there is no doubt this can be improved by further exploration.

Ribes alpinum (Mountain Currant) and *Carpinus betulus* (Hornbeam) were noted in the Howstean Woods along with some other obviously planted trees and shrubs, and the aliens *Epilobium nerterioides* (New Zealand Willow Herb), *Mimulus moschatus* (True Musk) and *Mimulus guttatus* (Monkey Musk) were in the gill not far from the track to Middlesmoor. *Thelypteris oreopteris* (Mountain Fern), *T. phegopteris* (Beech Fern) and *T. dryopteris* (Oak Fern) were added to the list for the square. Both the last named were abundant especially in the damper more shaded parts. *Ranunculus lenormandi* occurred in one place but the majority of the additions were common plants, including five species of *Carex* and eleven grasses. C.M.R.

SPRING FORAY, CLOUGHTON

May 3rd-7th, 1962

W. G. BRAMLEY

A COLD foray with some rain during Saturday night produced one of the most meagre collections of recent years. No doubt the previous cold and dry conditions of March and April were responsible for this. Only seven members were present and at one time it appeared that the meeting would be a 'stag' party. Two visitors helped to swell the party.

Friday was spent round Throxenby Mere and adjacent pastures, together with the woodlands of Lady Edith's Drive and a small part of Forge Valley. A few agarics were collected but nothing of any consequence. Wykeham and part of Troutsdale proved little better. The keen eyes of the Chairman spotted *Monilinia johnsonii* growing on hawthorn fruits. This species has only just been included in the British list by T. E. T. Bond (*Trans. Brit. Myc. Soc.*, **44**, 613, 1961). Specimens have been deposited in R.B.G. Edinburgh and Kew, and with W. D. Graddon. *Nectria pinea* was also collected and is a species which should turn up more regularly in coniferous plantations. *Sphaerulina alni* was unexpected, as in the field it was thought to be probably *Crytospora suffusa*. The latter is frequent and *Sphaerulina* may have been overlooked, though *Alnus* has been collected on intensively at various times and I have only one record from Askham Bog many years ago.

The Duchy of Lancaster woods at Cloughton were extremely dry and unproductive and little was collected. Time was also spent in the fields and on the coast in the immediate vicinity of headquarters.

In the three main areas some time was spent with more or less success in trying to extract the cones from which two species of *Pseudohiatula* (*Marasmius*) were growing. These cones are often several inches under the surface and must have taken several years to become buried. The fungus always springs from the seeds of unopened cones and one wonders how and when infection takes place.

† Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*.

* Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 62.

D. = Duchy of Lancaster woods. T. = Throxenby Mere and Lady Edith's Drive.

W. = Wykeham and Troutsdale.

AGARICS (R. Watling)

† *Coprinus miser* Karst., W., on cow dung.

* *C. velox* Godey, T. on cow dung.

Pseudohiatula (*Marasmius*) *esculenta* (Wulf. ex Fr.) Sing., T.

P. stephanocystis Hora, D. W., both on *Pinus* cones.

DISCOMYCETES (W. G. Bramley)

† *Monilinia johnsonii* (Ell. & Ev.) Honey, W., on *Crataegus* fruits.

* *Micropodia pteridina* (Karst.) Boud., Cloughton, on *Pteris*.

PYRENOMYCETES (W. G. Bramley)

† *Nectria pinea* Dingley, W., on ? *Abies*.

† *Sphaerulina alni* A. L. Smith, W., on *Alnus*.

HYPHOMYCETES

† *Monilia candicans* Sacc., T.

Our Garden Friends the Bugs: Who they are and how they help us, by Allan W. Forbes. Pp. 190. Exposition Press, New York, 1962. \$4.

A rambling account of the small creatures found, often casually, in the author's garden in America, illustrated by some crude drawings. In part the result of uncritical observation and in part culled from a small range of books, there is little real information but some curious deductions are made and peculiar opinions are expressed. Expensive but useless and misleading to the uninformed.

J.H.F.

FIELD NOTES

Desert Wheatear (*Oenanthe deserti*) in Yorkshire.—On the morning of April 16th, 1962, following two days of strong north-easterly winds, an unfamiliar Wheatear was located on the shore of the Humber between Kilnsea and Easington. The bird was observed for some twenty minutes and a full description taken.

The main features of the bird were the pale sandy buff colour, the black cheeks, ear-coverts and throat and the dark brown remiges. The tail pattern, which proved to be diagnostic, consisted of an 'off-white' rump and upper tail coverts, with most of the tail dark brown or black. Thus the white was not as striking as the white rump of the Common Wheatear (*O. oenanthe*) and there was no extension of the black on the central tail feathers. Also conspicuous was a very pale buff patch (paler than the mantle) formed by the median or lesser coverts and easily visible both in flight and when the bird was on the ground.

The bird was first thought to be a Black-eared Wheatear (*O. hispanica*) but, after consultation of the *Handbook*, it was identified as a male Desert Wheatear and was considered to be of the western race (*O. deserti homochroa*) which breeds from the Nile westwards across North Africa to Morocco.

The observer (G.R.N.) summoned P. J. Mountford, G. R. Edwards and R. F. Dickens to see the bird and the identification was confirmed (G.R.E. and R.F.D. had had previous experience of the species in Yorkshire, see G.R.E. *British Birds*, **XLIII**, 179-183 and plates 34-36 (1950)).

On the evening of the same day, H. O. Bunce, B. S. Pashby and F. de Boer were also able to observe the bird in the same locality, where it remained until April 19th and was seen by some ten other observers and photographed by J. C. H. Leeson.

This would appear to be the third recorded occurrence of this Wheatear in Yorkshire, previous records being on October 17th, 1885, on the Holderness coast, and from November 12th, 1949, to January 22nd, 1950, at Gorple Reservoir, near Halifax.—G. R. NAYLOR.

Large Mammoth Tooth at Brandesburton—A large molar tooth of a Mammoth (*Mammuthus primigenius*) was recently discovered in one of the gravel pits of the East Yorkshire Gravel Company at Brandesburton, which is about ten miles north of Kingston upon Hull in the East Riding of Yorkshire.

It is of unusually large size and in very good condition, except for slight damage apparently caused during the excavation and washing of the gravel in which the tooth was found. The tooth is approximately 9 in. long, 9 in. high and 4 in. thick, and weighs about 11 lb. The worn grinding surface is $6\frac{1}{2}$ in. by 4 in., showing that the tooth had not been in use very long before the animal died. As the surface is slightly convex and cuts at an angle across the corner of the tooth, it is probably an upper molar, and the 21 plates of which the tooth is composed show it was a third (last) true molar.

Mammoth teeth and tusks are found from time to time in the gravels and boulder clay of East Yorkshire. Unlike most fossils, they are liable to disintegrate fairly rapidly unless modern preservation techniques are used.

The tooth has been given to Hull Museums and may be seen on request at the Georgian Houses, 23-24 High Street, Hull.—DAVID A. E. SPALDING.

NATURE CONSERVANCY—EFFECTS OF TOXIC CHEMICALS

Research is now being done by the Nature Conservancy on the side effects of toxic chemicals on the British fauna. New chemicals and new methods of application may result in new hazards to the rarer and more interesting species. The entomological societies are represented on the Conservancy's Entomological Liaison Committee, which is kept informed of the progress of this research, and all entomologists are asked to help in keeping the review of this subject up to date by recording new developments in their areas in the use of toxic chemicals which may harm the insect fauna of hedges, ditches, roadside verges, etc. Observations should include time, place, name of spray, method of application and brief description of habitat affected, and should be sent to Dr. N. W. Moore, Toxic Chemicals and Wild Life Section, The Nature Conservancy, Monks' Wood Experimental Station, Abbots Ripton, Huntingdon.

BOOK REVIEWS

Flora of the British Isles, by A. R. Clapham, T. G. Tutin and E. F. Warburg. Second edition. Pp. xlviii + 1,269 with 84 text figures. Cambridge University Press, 1962. 70/-.

The decade which has passed since the publication of the first edition of this work has been an exceptionally active one in the history of British field botany. In 1952 systematic botany had already, after a long period of eclipse, been reinvested with respectability in academic circles, largely because evolutionary studies involving cytotaxonomic and ecotaxonomic research are inseparably bound up with parallel studies in pure systematics. The impetus which these fields of study have given to the analysis of plastic species and species aggregates has led to a rapidly growing volume of research work on the British flora and the whole outlook of serious systematists has undergone a great change since the benevolent autocracy of the Drucean days when most British botanists considered our flora very well known and when systematic studies were often more arbitrary than 'critical'. In addition to the many research problems in systematics which have been prosecuted during the last ten years there has also been an equally vigorous and sustained programme of field recording done in connection with the B.S.B.I. scheme for the publication of distribution maps of all British species. Both have yielded much new information.

This new edition of the Flora has been completely revised throughout to incorporate the new information and correct some (but not all) of the errors of the first edition. The accounts of some genera such as the brambles and marsh orchids have been entirely rewritten and others modified to greater or less degree. The treatment of the orchids has in fact been notably improved throughout and some useful additional illustrations have been provided. Some alien species included in the earlier work have been omitted and some indigenous plants of dubious status, such as the two forms of *Spiranthes romanoffiana* to which subspecific rank was formerly given, and *Ranunculus aquatilis* ssp. *sphaerospermus*, are now sunk without trace. The yellow-rattles are reduced from eight to three species, the elms from seven to three and, hydra-like, *Salicornia* has sprouted four new heads to replace four others which have been chopped off.

Many changes in nomenclature have been made to bring the book into line with Dandy's List, but the responsible author has unfortunately not seen fit to follow that List in the matter of generic boundaries in the Cyperaceae and Gramineae. If it is claimed that such decisions are largely matters of opinion then the reply is surely that the only opinion which counts in such cases is that of the family specialist with a world knowledge of the group concerned. The late H. H. Allan in commenting to the writer on the first edition, stated that the genera there—and here—split off from *Scirpus* break down in New Zealand. Is a genus which 'works' in Britain but not in New Zealand a sound genus? As a world authority on the grasses Hubbard's views on genera, which were accepted by Dandy, are bound to carry most weight. His masterly account of British grasses is not even mentioned in the bibliography nor is Manton's fundamental work on ferns or Schottzman's important work on *Callitriche* which made possible the revised account of this genus. Hulten's paper on the boreal arctic *Cerastia* and their hybrids, quoting Scottish gatherings, appears to have been overlooked. In my review of the first edition I drew attention to errors and omissions in the list of hybrids cited in the genus *Cirsium* but the same hoary list reappears and there are omissions of important characters in descriptions of the species. *Athyrium flexile* which preserved all its distinguishing features in cultivation at Leeds for fourteen years, is still treated as a variety of *A. alpestre*. It is remarkable how the status of this very distinct plant has, in each successive floristic work, excepting Hyde and Wade's *Welsh Ferns*, followed the views of those who lack familiarity with it and ignored the unanimous opinion of those with knowledge of the living plant. *A. flexile* has committed the indiscretion of not having a distinctive chromosome number; yet *Gymnocarpium* has but is still merged in *Thelypteris*, which is morphologically contestible and cytologically indefensible. Even more remarkable is the terminal position within the Pteridophyta assigned to the Ophioglossaceae, the most primitive of living ferns. It is equivalent to placing the Ranunculaceae after the Compositae. One wonders what justification can be advanced for maintaining this anomaly in a work which purports to follow a phylogenetic sequence in its arrangement.

As regards distribution, many amendments and corrections have been made though these are not as thorough as one would have wished. The most archaic mis-statement is the reference to *Cucubalus* as growing in the Isle of Dogs (wrongly attributed to Kent) where it has been extinct for over a century. No reference is made to the well-known Norfolk station. Lincolnshire is cited as the northern-most county for *Geranium rotundifolium* and *Oenanthe fluviatilis* though both occur in Yorkshire, the latter in East and West Ridings. *Vaccinium intermedium* grows in several stations in West Yorkshire in some of which it is plentiful; *Poa alpina* is still wrongly cited as in N.W. Yorkshire whereas the Ingleborough locality to which the record refers is in the West Riding; and where, to repeat my query of ten years ago, does *Carex arenaria* occur as an inland plant in East Yorkshire? *C. spicata* is still said to grow on 'acid but base-rich soil' and of what practical use is it to the field botanist to be informed that *Atriplex patula* is 'best distinguished by the leaf shape and chromosome number'? The inclusion of *Polygala oxyptera* within *P. vulgaris* apparently accounts for the habitat including heaths. These are defined in the glossary as communities 'dominated by heaths or ling usually on sandy soils with a shallow layer of peat', but such a habitat is so entirely foreign to restricted *P. vulgaris* as to increase the claim of *P. oxyptera* at least to varietal or subspecific rank. Incidentally I twice had occasion to refer to the glossary for definitions of the esoteric terms 'blaze' and 'pepo', but I looked in vain on each occasion.

Very few typographical errors seem to have escaped detection but concentration on detail in proof reading can often lead to failure to observe conspicuous errors and this is so in the case of fig. 81 (fig. 74 of the old edition) which has been printed upside down. As the legend to the series of fruits depicted remains as before the references are now reversed and this is sure to lead users astray.

The format of the book has been notably improved in this edition; the increased page size and changed binding combine to make it a more handsomely produced volume than its predecessor. The high standard of the book is beyond question and to draw attention to a few of its flaws is no reflection on its merits, for no work of this kind and dimension can be expected to escape criticism. Though its cost has been substantially increased it is still good value: it is, in short, a good book which could and should have been even better.

W.A.S.

Studies in Fossil Botany, by D. H. Scott. Vol. 1, pp. xxiv + 434 with 190 illustrations. Vol. 2, pp. xvi + 446 with 136 illustrations. Haffner Publishing Co. Inc., New York and Carey Street, London, 1962. 160/-.

For the first half of the present century Scott's *Studies in Fossil Botany* was the text-book on fossil plants. All teachers and students turned to it, for its wealth of detail and good illustrations were combined with authority and readability. Since the publication of the last edition in 1920-23, there have been rapid advances in palaeobotany. New discoveries have influenced ideas on relationships and homologies, and new text-books are available which incorporate more recently discovered facts and views on their evolutionary implications. The very extent of present knowledge, however, precludes the same detailed anatomical treatment and it is well that the facts so admirably presented by Scott should be available again in this reprint of his classic work; though only libraries can be expected to pay so high a price for volumes which contain nothing of the last forty years' contributions to a rapidly expanding subject.

W.A.S.

Wild Flowers of the Countryside, by A. J. Huxley, illustrated by C. F. Tunnicliffe. Pp. 80 with 50 coloured illustrations and 20 drawings. Blandford Press. 5/-.

To be of value to beginners, illustrated books on wild flowers should portray those plants which beginners are most likely to meet on their rambles. In this book the fifty species illustrated include a high proportion of such rare plants as Marsh Gentian, Vernal Squill, Globe Flower, Purple Saxifrage, Pasque Flower, etc., which the user is very unlikely to find until well launched on his hobby. As the book is intended for the uninitiated its value is consequently very limited. The illustrations are 'reproduced by courtesy of Brooke Bond Tea Ltd.' and this probably helps to explain the random selection. A chatty text accompanies the pictures.

W.A.S.

Destructive and Useful Insects: Their habits and control, by **C. L. Metcalf** and **W. P. Flint**. Fourth edition revised by **R. L. Metcalf**. Pp. xii+1087 and 580 text figures. McGraw-Hill Book Co. Ltd., 1962. 135/6.

Originally published in 1925 this edition has been 'thoroughly revised, extensively rewritten, and completely modernised.' It is a thoroughgoing text-book orientated around the economic entomology of North America. The first 300 pages are devoted to general entomology and include all that is necessary of morphology, physiology, biochemistry and classification. The remainder of the book is devoted to pests, their life histories and material control. These are classified according to the material attacked, e.g. corn, legumes, cotton, vegetables, fruit, domestic animals, man, etc. Within each of these groups keys are given for the identification of the pest and methods of eradication are suggested. The book is not merely a text-book, but is a permanent instrument of reference of great value. The approach is entirely practical and many of the modern advances in economic entomology and associated technologies are included. The value of this book when first published must have been enormous, and in its revised form, time has done little to diminish it.

H.H.

Entomophagous Insects, by **C. P. Clausen**. Pp. x+688 with 257 text figures. Hafner Publishing Co. Inc., New York and Carey Street, London, 1962. 100/-.

This book is an unaltered reprint of a well-known McGraw-Hill classic. The printing itself has reproduced very well but the figures have suffered somewhat and do not compare with those of the original publication.

The reviewer knows no other book which brings together so much information on insects parasitic and predatory on other insects. The Hymenoptera, as is to be expected, occupy more than half the book and some account is given of all types of parasitic and predatory behaviour. One does not need to be an expert entomologist to be fascinated by the accounts of egg parasites, of the manner in which larval parasites obtain access to hosts, of the way in which *Methoca* allows itself to be grasped by the mandibles of a tiger beetle larva in order to achieve a suitable position for stinging. Another most interesting chapter concerns the varied relationships of Lycaenid butterflies with aphids and ant larvae.

The book is authoritative and fully documented. We must be grateful to Messrs. Hafner for making it once more available.

H.H.

Orang-Utan, by **Barbara Harrison**. Pp. 224 with 24 photographs, one in colour. Collins, 1962. 25/-.

This informative book gives a comprehensive survey of the early records and persecution of the orang-utan, and much invaluable material collected by locating and watching the animals alive and in their natural surroundings in the jungles of Borneo. Mrs. Harrison has also studied them closely in her own home by adopting and rearing the motherless babes picked up after hunting parties. Attention is drawn to the disturbances created, in the name of progress, by construction work, which results in the ever decreasing habitat, and to the exploitation of the species for financial gain. We have been warned continuously of late of the decrease in numbers of so many of the most interesting large mammals and the orang-utan is yet another addition to the growing list of threatened animals. This fascinating and instructive book has given me much pleasure and I warmly recommend it to all animal lovers.

E.H.

Wild Animals of the World, by **T. L. C. Tomkins**. Pp. 208 with 522 illustrations mostly in colour. Blandford Press, London, 1962. 15/-.

This is a pocket-sized, freely illustrated book of mammals grouped according to the continent of occurrence. The descriptions of each animal are necessarily short plus an additional note on the food, etc. Each group is prefaced by a short introduction to the conditions available to the mammals on the continent concerned and their ecological distribution. A more critical check of the book would have eliminated many small errors; the page on the water vole, for example, is headed by an illustration of the water shrew, the wild cat is shown with its ears up whilst those of the wood mouse are misleadingly small. There are also occasional spelling mistakes, omitted words and loose statements. The copy before me contains pages which have been omitted from the rest of the book's binding.

E.H.

Whales, by **E. J. Slijper**. Pp. 475 with 229 figures and photographs. Hutchinson, London, 1962. 63/-.

Whales and dolphins have long appealed to the imagination of mankind, but until recently an undue proportion of myth has taken the place of general understanding. Even today the difficulty of studying their habits, or even of investigating their more detailed structure, is still formidable and in reading this book one is continually aware of the problems yet unsolved. However, a point in their study has been reached when a reasonably balanced picture can be presented and this Professor Slijper has admirably achieved in an account which is popular in the best sense. Careful clarification of a distinctly technical subject has replaced any attempt at excessive simplification and each of his chapters can be understood and enjoyed against a very general background of scientific knowledge. The chapters themselves are devoted to locomotion, senses, feeding and so on, and in each the fascinating adaptations which have resulted from the long specialisation of these animals to an aquatic environment is discussed and related to the normal mammalian pattern. The book is very up-to-date; it is also attractively produced and well translated.

T.K.

The Observer's Book of Sea and Seashore, by **I. O. Evans**. Pp. 246 with 32 plates in colour and 32 in monochrome. Warne. 5/-.

This addition to the *Observer* series is divided into three sections. The first deals with the sea, its physical properties, waves, tides and currents, and the second with the physical features of the seashore, the types of coastline and the formative processes of land movement, erosion and deposition. Then follows a survey of coastal plants and animals, including lichens, flowering plants and algae, most of the marine invertebrates and a brief section on fishes, mammals and birds.

Clearly a lot of ground is covered and herein lies the merit or fault of the book. It should induce laymen to look more closely at coastal topography and introduce them to marine life. As the illustrations are remarkably good for a book of this size, identification of many common species will be easy, but the value to amateurs could have been enhanced by concentrating upon this aspect and omitting the rarer, the microscopic and the planktonic forms. In particular, more ecological data would dispel the impression that most of the species described can be found on most shores; and for those readers whose interest has been aroused a reference to more advanced handbooks would not have been amiss.

J.R.L.

Prehistoric Reptiles and Birds, by **Josef Augusta**. Illustrated by **Zdeněk Burian**. Pp. 104 with 23 black-and-white and 16 coloured plates. Paul Hamlyn, London, 1962. 12/6.

The flying reptiles of the mesozoic and the early toothed birds have an inherently dramatic quality which have made them favourite subjects for artistic reconstructions. Those of Burian reproduced here are certainly amongst the best which have appeared and are as accurate as present knowledge permits; in addition to the beautifully coloured plates, there are also a number of excellent photographs of the actual fossils. The accompanying text is somewhat incidental; rather than any discussion on the many puzzling features of these creatures, such as the rotation of the hind limbs in the later pterodactyls or the astonishingly modern feather structure in *Archaeopteryx* a bird which had barely achieved flight, it is couched in more or less general terms; but it is pleasantly discursive and supplies some interesting historical background. The title of the book should read 'Flying Reptiles.' since they only are considered. The splendid quality of the plates makes the price appear quite uneconomic by Western standards.

T.K.

Watchers at the Pond, by **Franklin Russell**. Pp. 254 with 30 sketches. Hodder & Stoughton, 1962. 16/-.

This is a very enjoyable book describing wild life in and around an American pond throughout the year. Unlike so many of its kind it is not full of desperate fights and animal heroes, nor are the descriptions confined to animal life; they include the varying conditions which make up the environment itself and which necessitate the special adaptations required for survival. The author is obviously well versed in natural history and in recommending the book to readers of all ages I endorse its selection as the 'Book Society alternative (non-fiction) choice.'

E.H.

A Bird in its Bush, by **Michael Lister**. Pp. 142 with 16 pp. of photographs. Phoenix House Ltd. 16/-.

Geology, soils, climate and weather, and vegetation are considered in relation to bird habitats. Separate chapters deal with Birds and their neighbours, Birds and other animals (including insects and man and indeed all life). A last chapter, on 'Habitat Surveys,' teeming with suggestions, is followed by an appendix of thirty-two pages, bibliography, and indices covering birds, plants, and general information. Some of the material and all the photographs are taken from the author's larger book, *The Bird Watcher's Reference Book*, published in 1956.

The jacket says the book will have a special value for those beginning field work, with which we agree. It will be useful, too, to any who hitherto have insufficiently considered the inter-connection of birds with other orders. Every serious field ornithologist knows something, some quite a lot, about bird habitats; the need for some knowledge of plant ecology is stressed. Examples are culled from experiences and literature concerning many parts of the world, but mainly from Britain. The subject is universal and complex, and can only be tackled piecemeal. Individuals can contribute, but teamwork offers more hope of answers to many questions. Particularly urgent for study are the differences being made to wild life of all kinds, the world over, by man's continual interference and by his use of sprays and 'pesticides.' We are reminded that we shall not again be able to see a study area in exactly the same state as at the time of our survey as change never ceases. 'There cannot be too much detail' in our notes for future comparisons and for building pictures for every species.

R.C.

A Home for Woody, by **Ivah Green**. Pp. 95 with 32 photographs in gravure. Abelard-Schuman Ltd., London, 1962. 12/6.

'Woody' could be wader or warbler or dove; here it is the American Wood-Duck, of which the life-story is told in very readable prose, singularly free from Americanisms, from the laying of eggs in a hollow tree in spring to southward migration in autumn and return in spring to woods and water. Nesting-boxes are used freely in lieu of holes in trees. The story ends with protests against over-shooting and other causes of diminution in numbers of ducks; and with the plea that 'Woodies' are part of Creation and have a right to their place on the earth—a plea of conservationists everywhere.

R.C.

The Naturalist's Riviera, by **A. N. Brangham**. Pp. 339 with 43 photographs by Vanden Eeckhoudt, and map. Phoenix House Ltd., London, 1962. 42/-.

The admirable illustrations help to present the Riviera and Provence in a vivid light: an ancient and romantic district with a modern fringe, characteristic climate, and a remarkably rich flora and fauna. A painstaking work has been produced by the author, efficiently rounded off with appendix, a formidable bibliography, list of scientific names and a general index. There is a chapter on the subterranean world of living fossils, and sections devoted to tree-frogs, newts, snakes, lizards and geckos, and there is news about local land-snails, their enemies and parasites.

Butterflies and moths are mentioned but the chapter is not quite up to date. Much of the book is devoted to grasshoppers and crickets, cicadas, mantises, stick-insects, ants, termites and ant-lions; and it is clear that the writer is particularly fond of the Orthoptera. The Côte d'Azur and Mediterranean region are so readily accessible nowadays, and the prospect of warmth and sunshine so inviting that increasing numbers of British nature-lovers are exploring the less frequented parts of south-eastern France. To them, this book will be invaluable.

J.A.

Plant Life in Brecknock, by **H. A. Hyde** and **D. P. M. Guile**. Pp. 10. Published by and obtainable from the Brecknock Museum, Brecon. 1/-.

This short sketch of the vegetation of Breconshire describes the salient features of the woodlands, grass heaths, mountains and aquatic vegetation found in the county. The emphasis is on the general ecology of the vegetation types described with mention of the more interesting species and floristically rewarding localities. A useful outline for visitors in general and visiting botanists in particular.

W.A.S.

Nature Adrift: The Story of Marine Plankton, by James Fraser. Pp. v+178 with 40 plates and 38 figures. Foulis, London, 1962. 45/-.

Dr. James Fraser is one of the world's foremost experts on plankton and this volume contains, as might be expected, a good deal of specialised information. However, it claims, with full justification, to be written for the general reader and there is no doubt that to appreciate this delightful book all that is required is an interest in natural history.

The introductory chapter contains a great deal of interesting historical matter and is followed by a chapter on 'methods.' Possibly this is too detailed for the general reader and the specialist has other sources of information, but this is a minor criticism. The excellent sections on planktonic plants and animals are followed by a discussion of larval forms which constitute such an important part of the plankton, especially at certain seasons, and by a chapter on planktonic fish. Seasonal variations in the plankton and geographical distribution receive a good deal of attention and the author's special interest in planktonic organisms as indicators of water movements is well treated. The concluding section contains some interesting arithmetic and attempts to assess the value of plankton as human food.

This book, although not large, is encyclopaedic. It is beautifully produced on art paper and is copiously illustrated by plates of the highest quality and by line drawings. Some of the photomicrographs of planktonic organisms are from the camera of Dr. D. P. Wilson, but many are the author's originals and some are in colour. There is no doubt that *Nature Adrift* will indeed give its readers 'a clearer picture of an unfamiliar marine world and its place in relation to their own life'. It will also give them a great deal of pleasure.

J.M.D.

Creatures of the Sea, by William B. Gray. Pp. 187 with 38 photographs in black and white. Frederick Muller Ltd., London. 21/-.

This is an account of some of the incidents in the career of the man who is now Director of the Seaquarium in Florida. From the enthusiasm of youthful angling, coupled with the less usual opportunities of supplying live specimens to commercial aquaria, the author progressed to big-game fishing. At first this followed the customary lines until the idea of providing a large marine aquarium was developed. The problems of securing live material are much greater than those of simple fishing and the methods and apparatus have to be ingenious, particularly those concerning the transport of the captured specimens. No doubt there will be envy in the minds of many readers when the author calmly refers to the capture of individual species, the weight of which is measured in hundredweights. This book will appeal to many, even though there is an air of showmanship in some of the cases quoted. It could also be said that some of Captain Gray's expeditions merited a longer and more serious treatment in that valuable information must have been acquired as to the habits of some of the rarer species obtained.

J.H.E.

Animals of the Forest, by Marcelle Verite. Pp. 92 with numerous illustrations by Romain Simon. Oliver and Boyd, 1962. 17/6.

This book is a companion for *Animals of the Wild* 1961 and also contains many illustrations, large and small, in colour and black and white, but both the illustrations and the text are very disappointing. It is a book without substance, translated from the French.

E.H.

Introduction to Biology, by Douglas Reid. Pp. 134 with 17 text figures. Cambridge University Press. 15/-.

This book would be suitable for children aged about 10-13. The drawings are intended to be self-explanatory and should certainly add to its appeal to the junior age group. The text is written in simple, non-technical language; several statements are, however, ambiguous, some misleading and there are occasional inaccuracies and some surprising omissions. It is odd that a book with this title should virtually ignore the process of respiration, so vital to all living organisms. Yet through the freshness of its outlook and approach to biology and abundant suggestions for things to do, this book should encourage the young to go out and observe and to think for themselves.

M.S.H.

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Yorkshire Naturalists' Union.

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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

Joint Hon. General Secretaries :

Miss C. M. ROB, F.L.S., Catton Hall, Thirsk

R. S. ATKINSON, F.Z.S., 46 White Hill Avenue, Barnsley

Spring Sectional Meetings 1962

All Members and Associate Members of the Union are eligible to attend these meetings.

VERTEBRATE ZOOLOGY SECTIONS

Saturday, 10th March. Leeds. Full details of the meeting place and the agenda will be circulated in the usual way.

ENTOMOLOGICAL SECTION

Saturday, 14th April. In Leeds University at 2-30 p.m.

CONCHOLOGICAL SECTION

Saturday, 12th May. Meet in Leeds prior to visiting the Cleveland area in the North Riding.

BRYOLOGICAL SECTION

Saturday, 7th April. Micklefield.

FLOWERING PLANT SECTION

Sunday, 29th July. Lofthouse-Nidderdale, V.C.64. Those attending are asked to bring picnic lunch and tea. Meet at 11-0 a.m.

MYCOLOGICAL SECTION

Thursday, 3rd May to Monday, 7th May. The Spring Foray.

Headquarters: The Cober Hill Guest House, Cloughton, Scarborough. Terms 28/- per day.

Saturday, 26th May. The Union will meet at Bolton Abbey, V.C.64.

The Executive will meet on Saturday, 17th March, in the Large Committee Room, Parkinson Building, Leeds University, at 2-15 p.m.

Members are reminded that Subscriptions for 1962 are now due and should be forwarded without delay to Mr. Shaw at the address given above. (Full Members, £1; Family and Student Members, 5/-)

ENTOMOLOGICAL SECTION

Saturday, 14th, April

A meeting will be held in the Zoological Department of Leeds University (entrance in University Road, first door on right after leaving Woodhouse Lane) at 2-30 p.m. There will be a discussion on the distribution of Yorkshire butterflies in connection with the projected county list of Lepidoptera. It is hoped to arrange a short paper on Lepidoptera and members are asked to bring along exhibits of any order.

Cups of tea will be available but members should bring sandwiches.

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R. S. ATKINSON, Esq., F.Z.S., 46 White Hill Avenue, Barnsley.

Divisional Secretary:

Mrs. A. C. M. DUNCAN, Bransty, Rupert Road, Ilkley.

Telephone: Ilkley 683.

The 580th Meeting

WILL BE HELD AT

BOLTON ABBEY

V.C. 64

On Saturday, MAY 26th, 1962

HEADQUARTERS.—The Parish Room (next to the Rectory), Bolton Abbey by kind invitation of Rev. F. G. and Mrs. Griffiths. Cups of tea will be served at tea-time. **Please bring your own food**, as well as packed lunch. The Divisional Secretary would like orders for tea by Friday, May 18th.

TRAVEL.—Diesel trains:

from Skipton	10-5 a.m.	from Bolton Abbey	6-2 p.m.
arr. Bolton Abbey	10-17 a.m.	arr. Skipton	6-14 p.m.
from Ilkley	10-22 a.m.	from Bolton Abbey	5-20 p.m.
arr. Bolton Abbey	10-32 a.m.	arr. Ilkley	5-29 p.m.

Buses:

from Ilkley	10-55 a.m.	from Bolton Abbey	4-45 p.m.
arr. Bolton Abbey	11-15 a.m.	arr. Ilkley	5-5 p.m.

There are frequent buses from Leeds and Bradford to Ilkley, and diesel trains, but please check train times.

MAPS.—1 inch Ordnance Survey Map, Sheet 96, Bradford.

2½ inch Map, Sheet S.E. 05.

MEETING PLACE AND ROUTE.—The Hole in the Wall at 11-15 a.m. The area to be visited is in a National Park, and part of the Chatsworth Estates. Bolton Woods are a favourite haunt of naturalists, and well-known, but although Sectional excursions have been held there from time to time, the last full Union field meeting was in 1916. It is hoped that members who have been unable to attend the excursions in less accessible places in V.C. 64 will be able to take part in this one. Tea is arranged early to cater for those wishing to catch the bus.

Dogs must not be brought, and fires must not be lighted. Members are asked, to be especially careful in the plantations, and in all parts to observe the usual rules for the conservation of nature.

Admission to Bolton Woods: 6d. each.

CARS.—No waiting is allowed on the main road through Bolton Abbey. There is a lay-by between Bolton Abbey and Barden. Car parks: Bolton Abbey (two) 1/-, Cavendish Pavilion 2/-.

The main party will cross the river at Bolton Abbey and walk through the woods to the Valley of Desolation. Anyone wishing for a shorter walk may go by car to the Cavendish Pavilion and explore the woods from there, whilst a longer walk may be made to include Simon's Seat.

VERTEBRATES (J. R. Govett).—The following mammals may be found in the Bolton Abbey area: Long-eared Bat, Noctule and Pipistrelle bats. Moles and Hedgehogs are common, as also is the Common Shrew, whilst Water Shrew has been recorded. The Fox occurs, and Stoat and Weasel are common. The Grey Squirrel is present, but there are no recent records for the Red Squirrel which should be looked for. Long-tailed Field Mouse is common, Water Vole fairly common, and Common Field Vole abundant. Rabbits are recovering from myxomatosis, and the Brown Hare may be seen.

Of the Reptiles, Adder and Common Lizard have been recorded.

I have no up-to-date information regarding fishes, but *the* fish of the area is the Trout.

ORNITHOLOGY (W. F. Fearnley writes).—Bolton Abbey Woods with the River Wharfe flowing through their midst and pasture land at either end, bordered on the south-west with more pasture, and on the north-east with bracken slopes rising to moorland, attract many birds.

In the woods themselves one may expect to encounter Pheasant, Woodcock, Ring-Dove, Little Owl, Tawny Owl, Green Woodpecker, Great Spotted Woodpecker, Lesser Spotted Woodpecker, Jackdaw, Jay, Great Tit, Blue Tit, Coal Tit, Marsh Tit, Long-tailed Tit, Nuthatch, Tree Creeper, Wren, Missel Thrush, Song Thrush, Blackbird, Redstart, Robin, Blackcap, Garden-Warbler, Whitethroat, Willow-Warbler, Wood-Warbler, Spotted Flycatcher, Pied Flycatcher, Dunnock, Starling, Hawfinch, Greenfinch, Bullfinch.

Along the course of the river there is a chance of seeing Heron, Mallard, Snipe, Common Sandpiper, Kingfisher, Sand Martin, Dipper, Pied Wagtail, and Grey Wagtail, whilst the adjoining pasture and parkland support Lapwing, Snipe, Cuckoo, Skylark, Carrion Crow, Rook, Magpie, Meadow Pipit, Tree Pipit and Yellow Wagtail.

Those who climb the slopes may find Red Grouse, Merlin and Kestrel. All will probably see Swift, Swallow, House Martin and House Sparrow, also Rook and maybe Carrion Crow, and as most of these birds breed in the area, the ornithologists can be assured of an interesting day.

ENTOMOLOGY (J. H. Flint).—The area is not exceptional, but supports a typical West Riding dale fauna. The vertical river banks contain many colonies of the beetle *Bledius pallipes* (Grav.) and others should be sought. The variations of shingle bank are worth examination and many species of *Bembidion*, including *tibiale* (Duft.), *redtenbacheri* K. Dan., *atrocoeruleum* Steph., *nitidulum* (Marsh.), *rupestris* (L.), *decorum* (Pz.), and *atroviolaceum* Duf. have been recorded. *Clivina collaris* (Hbst.) should be found on sandy banks, and *Nebria gyllenhali* (Schoen.) and *Dianous coeruleus* (Gyll.) occur among the rough mossy stones where the stream from the Valley of Desolation joins the Wharfe. The luxuriant vegetation on the north bank of the Wharfe above this point, and the wooded areas and paths on the slopes above, are likely to be the most profitable if the day is fine. Sawflies are plentiful, Dolerines being numerous over all types of grassland, and the fine *Zaraea lonicerae*

L. has been recorded from the area and should be sought where the honeysuckle grows.

CONCHOLOGY.—Mrs. E. M. Morehouse sends the following list of molluscs which should be looked for: *Vitrea crystallina* (Müll.), *Vitrina pellucida* (Müll.), *Vitrea cellaria* (Müll.), *V. rogersi* (B. B. Woodward), *V. alliaria* (Mill.), *V. nitidula* (Drap.), *V. pura* (Alder), *Limax maximus* (L.), *Agriolimax agrestis v. pallida* (Shrenk), *Arion ater v. plumbea* (Roebuck), *Arion v. ater atterima* (Taylor), *Pyramidula rotundata* (Müll.), *Hygromia granulata* (Alder), *H. hispida* (Penn.), *Arianta arbustorum* (L.), *Helix nemoralis* (L.), *Cochlicopa lubrica* (Müll.), *Azeca tridens* (Pult.), *Jaminea secale* (Drap.), *J. cylindracea* (Da Costa), *Balea perversa* (L.), *Clausilia bidentata* (Ström.), *Succinea elegans* (Risso.), *Carychium minimum* (Müll.), *Ancylus fluviatilis* (Müll.), *Limnea pereger* (Müll.).

FLOWERING PLANTS (Dr. W. A. Sledge).—The following are the more interesting plants recorded for the Bolton Abbey Woods:

Thalictrum minus, *Trollius europaeus*, *Ranunculus auricomus*, *Cochlearia alpina*, *Hesperis matronalis*, *Viola reichenbachiana*, *V. odorata*, *Stellaria nemorum*, *Geranium sylvaticum*, *Prunus padus*, *Rubus saxatilis*, *Geum intermedium*, *Ribes spicatum*, *Parnassia palustris*, *Myrrhis odorata*, *Galium boreale*, *Asperula odorata*, *Chrysosplenium alternifolium*, *Cirsium heterophyllum*, *Crepis paludosa*, *Lathraea squamaria*, *Melampyrum pratense*, *Myosotis sylvatica*, *Pinguicula vulgaris*, *Orchis mascula*, *Platanthera chlorantha*, *Galanthus nivalis*, *Gagea lutea*, *Paris quadrifolia*, *Melica nutans*, *Sesleria caerulea*, *Thelypteris dryopteris*, *T. phegopteris*, *T. oreopteris*, *Equisetum telmateia* and *E. hyemale*.

I have specimens of coning *Equisetum hyemale* collected by W. H. Burrell on the Y.N.U. Excursion here in 1916 near the Wharfe above the Strid but have never succeeded in refinding the species here. *Gagea lutea* is plentiful near the junction of the Wharfe and the stream flowing from the Valley of Desolation but flowers are rarely produced.

MYCOLOGY (W. G. Bramley).—In recent years two forays have been held in the neighbourhood. For the report of the 1956 Spring Foray see *The Naturalist* for 1957, page 39.

A search for *Godronia* on dead branches of Black Currant in the wood just behind Barden Tower should be made. In the same place in 1961 during the Spring Foray a small disco was also found and it should be looked for again.

BRYOLOGY (G. A. Shaw).—The best ground for the bryologists is that part of the valley between the Strid and Barden Beck, and the west bank is better than the east. Here a wealth of bryophytes will be found. A small patch of *Orthodontium gracile* has been known high up on the grit rocks since found by Spruce in 1841. This is mentioned in the circular for 1916, though there is no reference to the now widespread *O. lineare*.

Dicranum montanum has its only Yorkshire locality here, while *Cynodontium bruntoni* occurs sparingly on a dry cliff on the east bank above the Strid. Other bryophytes which should be seen include *Distichium capillaceum*, *Fissidens rufulus*, *Zygodon mougeotii*, *Bartramia pomiformis*, *Dicranum fuscescens*, *Tetraphis pellucida*, (sometimes fruits), *Dichodontium flavescens*, *Grimmia apocarpa* var. *rivularis*, *Barbula spadicea*, *Trichostomum tenuirostre*, *Orthotrichum diaphanum*, *Anomodon viticulosus*, *Hookeria lucens* and many others.

Some old records of which I should like to have some recent confirmation include *Antitrichia curtipendula*, *Dicranodontium logirostre*, *Hedwigia*, *Diphyscium foliosum* and *Discelium nudum*.

TEA AND MEETING.—At the Parish Room, Bolton Abbey at 4 p.m. After tea there will be a short meeting for reports of the day's work, and for the election of new members.



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R. S. ATKINSON, Esq., F.Z.S., 46 White Hill Avenue, Barnsley.

Divisional Secretary:

I. C. LAWRENCE, Esq., 57 The Oval, Brookfield, Middlesbrough.

The 581st Meeting

WILL BE HELD AT

SALTBURN-BY-THE-SEA

V.C. 62

On SATURDAY, JUNE 9th to
MONDAY, JUNE, 11th, 1962

HEADQUARTERS.—The Delaville Hotel, Marine Parade, Saltburn-by-the-Sea. Proprietor, Mr. E. Reay, Bed and Breakfast, 19/6, with evening meal 25/6.

Other accommodation. Groveside Hotel, Marine Parade, the Zetland and Alexandra Hotels, both three star and the Queen, two star. There is also a Youth Hostel at Saltburn.

It must be stressed that early booking is essential; in case of any difficulty, contact the Divisional Secretary, but it must be appreciated that he may not be able to help any one trying to book at the last minute.

TEA AND MEETING.—Tea followed by the usual meeting at Headquarters, 5 p.m., Monday. High Tea 5/6, Afternoon Tea 3/7, these **must** be booked through the Divisional Secretary not later than **June 2nd**, but residents may make their own arrangements on arrival.

TRANSPORT.—There is a regular diesel train service from Darlington throughout the day. Main line trains from York and Newcastle are suitably connected at Darlington.

Buses: The United Automobile Company operates frequent services and there should be no difficulty in finding suitable buses from all parts.

Summer time tables are not yet available but the Divisional Secretary will be pleased to give information regarding transport on request.

MEET.—10 a.m. each morning at Headquarters.

MAP.—The Ordnance Survey No. 86 1 inch to the mile and Sheets 55/62, 55/61 and 55/72, 2½ inches cover most of the area.

AREA TO BE VISITED.—Whereas Saltburn itself is fast becoming a popular seaside resort for Tees-side, it still retains much of its varied scenery and charm. Old Saltburn still stands unspoiled beneath the famous cliffs which rise up to 360 ft. at Huntcliff, and thence continue southward towards Whitby. From the northern end of the town towards Marske and Redcar the coast is bounded by banks of sand and diluvial clay. Inland to both Skelton and Brotton run two deep wooded gills the streams of which unite at the foreshore. Both these valleys provide a quiet, and virtually unspoiled bit of scenery. Similar glens run down to the sea to the south of these and are kept preserved by the Skelton Estate, the most notable being the Kilton Valley in which the ruins of Kilton Castle are still to be seen; beyond the source of these gills lie the open moors.

During the weekend it is hoped to cover three contrasting areas in this neighbourhood. The open salt-marshes and adjacent land at Coatham and towards the Tees Estuary; one of the wooded glens already mentioned and the cliffs and old railway line from Saltburn to Skivingrove.

PERMISSIONS.—Have been requested from The Tees Conservancy, Messrs. Dorman Long & Co., and the Skelton Estate Agent.

ORNITHOLOGY (Messrs. P. J. Stead and I. C. Lawrence).—The cliffs at Saltburn are still the breeding places for fulmars and cormorants; Teesmouth itself needs no introduction to bird watchers, the marshes being the breeding places for Redshank, Ringed Plover, etc., Little and Common Tern have nested in recent years. The young plantations in the Kilton Valley have provided haunts for most of our common warblers including Lesser Whitethroat and Grasshopper-Warbler.

FLOWERING PLANTS (I. C. Lawrence).—The areas to be visited will provide a list of plants too numerous to give in detail. J. G. Baker in the Flora of North Yorkshire records Sea-kale (*Crambe maritima*) and Wild Cabbage (*Brassica oleracea*) at Huntcliffe neither of which has been seen recently, he also records the Sea campion (*Silene maritima*), Spindle berry (*Euonymus europaeus*) and Spotted medick (*Medicago arabica*). Other plants of interest in the Saltburn area are Wood vetch (*Vicia sylvatica*); Seaside thistle (*Carduus tenuiflorus*); Brookweed (*Samolus valerandi*); Tuberous Comfrey (*Symphytum tuberosum*); Dropwort (*Filipendula vulgaris*); Dyers Greenweed (*Genista tinctoria*) and Green-winged orchid (*Orchis morio*).

Two notable discoveries (or rediscoveries) were made last year in the neighbouring woodland, Bird's nest orchid (*Neottia nidus-avis*) and Dutch-rush (*Equisetum hyemale*).

The open waste land around Warrenby and Dormanstown should yield some interesting aliens, as should the slag tips at South Gare and at Teesport where many interesting plants seem to be in danger of extinction owing to dock extensions in the area.

One of the very common plants of this district today is Oxford Ragwort (*Senecio squalidus*). The plant was first recorded 29 years ago in 1933; since then it has spread with spectacular rapidity on both the Yorkshire and Durham sides of the Tees. Wall Rocket (*Diplotaxis tenuifolia*) has been naturalised at Teesmouth for many years.

BRYOLOGY (G. A. Shaw).—The bryophytes of the Saltburn area were worked assiduously by the late Richard Barnes, at the time when he was curator of the gardens at Saltburn, but since his time probably little work has been done. William Ingham, writing in 1916, reports the following as growing by the stream which runs by Saltburn gardens: *Dicranella varia*, *Fissidens exilis*, *F. viridulus* var. *lylei*, *Tortula ruraliformis*, *Barbula tophacea*, *B. spadicea*, *Eucladium verticillatum*, *Trichostomum crispulum*, *T. brachydontium* var. *littorale*, *T. tenuirostre*, *Ulota phyllantha*, *Orthotrichum cupulatum*, *O. stramineum*, *Pohlia albicans*, *Brachythecium albicans*, *Hygroamblystegium tenax*, *Cratoneuron filicinum*, *Leptodictyum riparium*. A record of which

modern confirmation is desirable, is for *Grimmia maritima* on maritime rocks near Saltburn. At the turn of the century, William Ingham found many rare bryophytes, notably *Petalophyllum ralfsii*, on Coatham Marshes, and a list of the bryophytes which survive on any remnants of the marshes would be of great interest. There is a possibility that the rare moss, *Ptilium crista-castrensis*, has occurred at a place known as Car Lin, SE. of Saltburn, and anybody who can get to this point might bear this in mind.

ENTOMOLOGY (J. H. Flint).—Previous Union meetings at Saltburn appear to have been entirely unproductive of insects worthy of note, but an indication of the possible riches of the district may be gleaned from old records. Mr. M. L. Thompson worked this area regularly for beetles, and while he took some interesting species in Saltburn Wood, the most notable ones came from the sea coast, at least in the case of the ground beetles, and the coleopterist would probably find the shore, to both sides of the town, the best areas to work. *Nebria livida* (L.) is recorded from the cracks of the clay cliffs and should be sought where moisture trickles down to the shore. *Aepus marinus* (Stroem) occurred under large stones embedded in shingle at high water mark, and *Lebia chlorocephala* (Hoff.) was found in a sand pit on the sea banks. Other coastal species include *Dyschirius arenosus* Steph., *Brosicus cephalotes* (L.), *Bembidion andreae* v. *bualei* Du V., *B. assimile* Gyll., *B. saxatile* Gyll., and *Calathus mollis* (Marsh.). Off the shore, one can only suggest that other orders should be sought in those places where the vegetation is most varied.

There are ample opportunities for both freshwater and marine biologists. There are a number of ditches and ponds in the Coatham marsh area and the rocks at both Saltburn and Redcar should give ample scope for work.

Members visiting the rocks below Huntcliffe should be careful to keep a watch on the tide. This area is known to be dangerous.

PREVIOUS VISITS.—The Union visited Saltburn in 1887, 1915, and 1932. The report of the meeting 30 years ago in 1932 is short and rather depressing, the day's work is summed up in a single sentence, 'Practically nothing new either to the flora or fauna of the district was noted.'

In 1887, thick fog hampered the work of the party but the report gives a good list of flowering plants noted in the valley of the Skelton beck. A list of 45 birds is given and the conchologists seem to have had an interesting time. There is no entomological report available for this meeting.

Early copies of *The Naturalist* publish a number of papers on this part of North East Yorkshire but there is no up-to-date information on many branches of Natural history in the area and it is hoped that all sections of the Union will be represented.

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Divisional Secretary :

Miss C. M. ROB, F.L.S., Catton Hall, Thirsk.
Telephone: Topcliffe 224.

The 582nd Meeting

WILL BE HELD AT

RICHMOND

V.C. 65

On SUNDAY, JUNE 24th, 1962

MEET.—The party will meet in Richmond Market Place, near Holy Trinity Church at 10.45 a.m.

TRANSPORT.—Richmond may be reached by bus from Darlington (United Service No. 27) the first bus departs 10 a.m. arriving Richmond 10.40 a.m.

Return buses to Darlington leave as follows:

dept. Richmond	arr. Darlington
6.30 p.m.	7.10 p.m.
7.0 p.m.	7.40 p.m.
7.30 p.m.	8.10 p.m.
8.0 p.m.	8.30 p.m.

There is a diesel rail service Darlington/Richmond but on Sunday the first train from Darlington is 12.30 p.m.

Members needing transport, and those with spare seats in their cars are asked to get in touch with the Divisional Secretary who will try to make the necessary arrangements.

MAPS.—The 1 inch Ordnance Map Sheet 91 (Ripon) and Sheet 45/10 2½ inch to the mile cover the area to be visited.

PERMITS.—Permission to visit Red Scar has kindly been given by J. R. W. Calvert of Downholme Manor. The usual stipulations are in force, **No Dogs** are allowed, all gates to be shut, and no damage to walls and fences. It is hoped to have further permits for the adjoining areas by the date of the meeting.

PREVIOUS VISITS.—The Union has visited Richmond on four occasions, 1881, 1895, 1928 and 1956, and reports of three, 1881, 1928 and 1956, have appeared in *The Naturalist*. The 1881 meeting held in August, was attended by thirty members, the 1928 meeting, also held on August Bank Holiday, was very ambitious and a great deal of ground was covered. Headquarters were at Darlington, and some of the party even attempted to get to Mickle Fell, while Greta Bridge and Aske were also visited. Most of the reports for this meeting are devoted to conchology and entomology and members interested should consult *The Naturalist* for 1928 for information as should mycologists. The mycological section held an autumn foray at Richmond in 1956.

On the occasion of the Union's visit in 1956, Whitcliffe Wood and Applegarth on the north side of the river were visited, and reports of the birds, mammals and flowering plants appear in *The Naturalist*.

AREA TO BE VISITED.—The woods and scars known as Red Scar near Downholme Bridge, on the south bank of the Swale.

The steep wooded slopes are rather unstable and care should be taken as the rough ground can be dangerous.

The Swale valley, narrow for some miles above Richmond, widens out just after Downholme Bridge. The steep slopes get little sun for much of the year. Coal, copper and lead have been worked in the area and at Red Scar itself there are still signs of the old copper mines. The best view of the area is from the road leading to Marske over Downholme Bridge.

ROUTE.—Proceed by private car to the disused quarry about 4 miles from Richmond on the main Reeth road where it is proposed to park the cars. Red Scar may also be reached from the Downholme to Hudswell road, but here the parking of cars is difficult except in very dry weather.

ORNITHOLOGY (R. Chislett).—In fairly recent years parts of the north side of the Swale near Richmond and Marske have been explored, and of the south side about Grinton. Above and below Downholme about the woods and beck-sides, and marshy ground down to the river, with rough ground up to *ca.* 1,000 ft., species and numbers should be similar; but never can one be sure without going over the ground carefully. Among woodland species should be several warblers, probably both flycatchers and Redstart, Tree-Pipit, Redpolls, Goldcrests, at least one woodpecker and probably an owl or two. Wading birds should include Sandpiper, Curlew, Snipe and possibly Redshank. A good list should be possible including all three wagtails.

FLOWERING PLANTS (C. M. Rob).—Red Scar is well known as the only locality in V.C. 65 for the Sea-Campion (*Silene maritima*), and from the same place several other rare plants have been recorded. These include the Rock Whitebeam (*Sorbus aria*) subsp. *rupicola* and Solomon's Seal (*Polygonatum odoratum*). Columbine (*Aquilegia vulgaris*) is recorded from Round Howe and Applegarth, and the Large-leaved Lime (*Tilia platyphyllos*) is considered native at Clint Bank, Richmond and Round Howe by some authorities.

Yew is abundant in this part of the dale but few young trees were to be seen in 1942. Since then the rabbit population has been lowered by myxomatosis and conditions may be more favourable for the spread of this tree.

The dominant tree cover is deciduous, though in parts there has been some recent afforestation with a large proportion of Larch. Wych Elm, Ash, Sycamore Birch and some Oak are the main trees with Hazel, Holly, Willows and Bird Cherry common in the shrub layer and Alder where the ground is wet. The Giant Horsetail (*Equisetum telmateia*) is plentiful in many of the wet places where the shade is not too dense. Primroses are still a fine sight in the spring although fewer than in the past owing to the changed methods of farming.

Wood Cranes-bill (*Geranium sylvaticum*) and Sweet Cicely (*Myrrhis odorata*) are common as roadside plants from Richmond up to Reeth and beyond. Wood vetch (*Vicia sylvatica*) is given in Baker's *North Yorkshire* ' From below Red Scar and along Billy Bank to Richmond ' but there seems to be no recent record of its still occurring.

Bird's Nest Orchid (*Neottia Nidus-avis*) is still in Billy Bank Wood, but there is no recent confirmation for the Dark-red Helleborine (*Epipactis atrorubens*) on Red Scar, or Lily-of-the-Valley (*Convallaria majalis*) at Round Howe. Wood Barley (*Hordelymus europaeus*) is fairly plentiful in the woods between Richmond and Lownthwaite Bridge.

Bryologists will find good ground by the river banks and in the woods, especially the wetter parts.

No mycological report has come in but the Divisional Secretary has gathered some fine mushrooms on Downholme Park pastures.

TEA AND MEETING.—Mrs. Holloway, 54 Gilling Road, Richmond, has very kindly offered to make tea for the party. Members should bring their own food. A small charge will be made to cover the hire of crockery, etc.

Tea will be at 5 p.m. followed by the meeting for the presentation of reports and any other business.

No. 54 is almost the last house on the right side of the Richmond to Gilling road. Cars may be left in the roadway, but it is hoped to arrange for parking off the highway.

Members wanting tea are asked to notify the Divisional Secretary by Monday, June 18th.

Yorkshire Naturalists' Union.

President :

Mrs. E. HAZELWOOD.

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.

Joint Hon. General Secretaries :

Miss C. M. ROB, F.L.S., Catton Hall, Thirsk.

R. S. ATKINSON, Esq. F.Z.S., White Hill Avenue, Barnsley.

Divisional Secretary :

Miss F. E. Crackles, B.Sc., 143 Holmegarth Drive, Bellfield Avenue, Hull.

The 583rd Meeting

WILL BE HELD AT

HORNSEA MERE

V.C. 61

SATURDAY, JULY 7th 1962

HEADQUARTERS.—The Recreation Hall at Seaton on the Hornsea to Leven road, will be available for use at tea-time. Ham and salad tea 5/-; Afternoon tea 3/6. **Tea should be ordered by post-card, a week in advance:** write to Mrs. E. S. Witty, 'The Villa,' Middle Lane, Seaton, Hull, by June 30th. A small charge for the use of the village hall will also be payable.

TRAVEL.—Hornsea is served by 'bus from Hull, Hessle, Beverley and Bridlington and by train from Hull. Seaton is on the Hull to Leven to Hornsea and the Hessle to Beverley to Hornsea 'bus routes.

Depart

Hull 8-45 a.m.

Hessle 9-30 a.m.

Bridlington 9-5 a.m.

Beverley 10-10 a.m.

Arrive

Seaton 9-42 a.m.

Seaton 10-44 a.m.

Hornsea

E.Y. garage 9-56 a.m.

Return

Seaton 7-13 p.m.

Seaton 7-13 p.m.

Hull 8-10 p.m.

Beverley 7-50 p.m.

Members should check 'bus times nearer the time of the meeting (East Yorkshire Motor Services, Ltd., 252 Anlaby Road, Hull). Members with transport difficulties and car drivers with vacant seats are requested to contact the Divisional Secretary as early as possible.

MEETING PLACE.—At the eastern end of the village of Seaton, at the corner of the road to Bewholme at 10-30 a.m.

ROUTE.—It is proposed to proceed from here to Wassand. Turn right on to a private road, half a mile east of Seaton. A message concerning detailed plans will be left at the Estate Office, Wassand, near to Wassand Hall.

MAP.—The area is covered by the Ordnance Survey 1 inch Map, Sheet No. 99.

PERMISSION.—Permission to investigate the vicinity of Hornsea Mere has been kindly granted by Sir H. M. Strickland-Constable, Bart. of Wassand Hall. Members should carry their membership cards with them. Dogs are not allowed and gates must not be left open. There must be no smoking and care must be taken not to disturb any birds still nesting and not to do damage to gates or fences.

THE DISTRICT AND PREVIOUS MEETINGS.—At the edge of the mere are extensive reed beds. There are very wet woods, mainly of Alder, as well as drier mixed deciduous woodland and coniferous plantations. Marshy ground out in the open would seem to be less extensive than formerly and there are also large areas of both grassland and arable land.

See *The Naturalist*, 1926, pages 277 to 283 for an account of a previous excursion. 'Notes on the Natural History of Hornsea Mere' by George Bolam in *The Naturalist*, January 1913, is mainly an account of the birds observed in the spring and early summer of the previous year.

FLOWERING PLANTS (E. Crackles).—The mere does not appear to support a wide variety of aquatic plants, the following being recorded: Yellow Water Lily (*Nuphar lutea*), Hornwort (*Ceratophyllum demersum*), Water Milfoil (*Myriophyllum spicatum*), also *Potamogeton pusillus*, *P. crispus*, *P. pectinatus*, *Lemna triscula*, and *L. minor*.

Nearer to the margins of the lake are beds of Mare's-tail (*Hippuris vulgaris*), Amphibious Bistort (*Polygonum amphibium*) and Glaucous Bulrush (*Scirpus tabernaemontani*) whilst the Flowering Rush (*Butomus umbellatus*) also occurs here. In the extensive reed beds important species include: Lesser Reedmace (*Typha angustifolia*) *Carex acuta*, the Common Reed (*Phragmites communis*) and *Calamagrostis canescens*, the Purple Smallreed. Other species recently recorded for the vicinity of the mere include: Hairy Buttercup (*Ranunculus sardous*), Meadow Rue (*Thalictrum flavum*), Ragged Robin (*Lychnis flos-cuculi*), Restharrow (*Ononis spinosa*), Marsh Cinquefoil (*Potentilla palustris*), Small flowered Willow-herb (*Epilobium parviflorum*), Great Hairy Willow-herb (*E. hirsutum*), Large Birdsfoot-trefoil (*Lotus uliginosus*), Wild Angelica (*Angelica sylvestris*), Marsh Lousewort (*Pedicularis palustris*), Gipsy-wort (*Lycopus europaeus*), Skull-cap (*Scutellaria galericulata*), Round-fruited rush (*Juncus compressus*), *Carex rostrata*, *C. vesicaria*, *C. riparia*, *C. elata*, *C. nigra*, *C. otrubae*, *C. disticha*, Reed-grass (*Glyceria maxima*), *Glyceria fluitans* × *G. plicata*, Reed-grass (*Phalaris arundinacea*) and Hairy Oat (*Helictotrichon pubescens*).

There has been no recent confirmation of the occurrence of the following species which were formerly recorded for the vicinity of the mere: Green-winged Orchis (*Orchis morio*), and Moonwort (*Botrychium lunaria*) on gravelly terraces; Burnt Orchis (*Orchis ustulata*), and Adder's Tongue (*Ophioglossum vulgatum*) in grassy places; Broad-leaved Helleborine (*Epipactus helleborine*) in the woods; Arrow Head (*Sagittaria sagittifolia*) and Bladderwort (*Utricularia vulgaris*) in ditches; also Greater Spearwort (*Ranunculus lingua*), Marsh Stitchwort (*Stellaria palustris*), Nodding Bur-Marigold (*Bidens cernua*), Marsh Orchid (*Orchis incarnata*) and *Blysmus compressus*.

ENTOMOLOGY.—For records of Donacian beetles found in the reed beds at the Mere, see 'Reed Beetles of the Genus Donacia and its Allies in Yorkshire' by T. Stainforth, B.A., B.Sc., in *The Naturalist*, 1944, pages 81 to 92 and pages 127 to 139.

TEA AND MEETING.—Tea at Headquarters at 5 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.

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Divisional Secretary :

R. S. ATKINSON, Esq., F.Z.S., 46 White Hill Avenue, Barnsley.

The 584th Meeting

WILL BE HELD AT

BAWTRY

V.C. 63

On SATURDAY, JULY 21st and SUNDAY, JULY 22nd, 1962

for the investigation of the area just inside the southern
boundary of the county.

HEADQUARTERS.—The Rockingham Arms Hotel, Bennetthorpe, Doncaster (T. I. Weetman, Proprietor). Bed and breakfast, single and twin-bedded rooms, 21/- per person. Packed lunch, 4/- per person. High tea, chicken salad, 8/6; beef salad or fish, 6/6 per person. Will those who require tea on the Sunday please advise the proprietor not later than Saturday, July 14th.

TRANSPORT.—The East Midlands Motor Services run buses from Doncaster to Retford, via Bawtry, from the Waterdale bus station at two minutes past the hour and thereafter every 20 minutes. As these are not so frequent on Sundays it is hoped that those members with spare seats in their cars will offer lifts. It is suggested that members meet at the hotel at 10-0 a.m. when arrangements can be made to visit selected areas in the light of what permits have been obtained. Mr. R. J. Rhodes will lead an excursion on Sunday and will be at the Finningley-Blaxton crossroads at 10-30 a.m.

MAPS.—The Ordnance Survey One Inch Map is Sheet 103 Doncaster. The 2½ inch Map SK59, Tickhill, may also be useful.

THE DISTRICT.—The area to be visited lies on the south-eastern boundary of the county so that it is important that members should not stray into Notts. Situated on the triassic sandstones it is covered by gravels, the muddy deposit called warp, and in places by peat. In addition to agricultural land there are numerous tracts of woodland. Hatfield Moor and the Lindholme area was visited by the Union in 1952 so it is felt that members might like to visit the country lying nearer Tickhill which is situated on good magnesian limestone.

ORNITHOLOGY (R. J. Rhodes).—The area is low lying and less than 50 feet above sea level. The immediate area around Bawtry and Austerfield has not been explored and a gravel pit at the latter place may prove interesting. Three miles north-west, at Rossington Hall, may be found various warblers such as Blackcap, Garden Warbler, and Grasshopper Warbler, three species of woodpecker and possibly Redstart and Nightjar. From the point of view of the ornithologist the most interesting locality in the whole of this border area is Blaxton with its numerous gravel pits, water-filled sand quarries and adjacent woodland. Here breed a small colony of Black-headed Gulls, Great Crested and Little Grebe, Mallard, Teal and Tufted Duck, Lesser Whitethroat and other Warblers, Nightjars and Spotted Flycatchers.

BOTANY (Dr. W. A. Sledge).—On the Nottingham side of the county boundary, between Bawtry and Misson, *Viola stagnina* and *Lathyrus palustris* are still to be found and *Barbarea stricta* occurs in ditches by the roadside. These should be looked for in suitably moist ground or along ditches bordering fields on the Yorkshire side of the boundary which has not been closely examined in the vicinity of Bawtry. A short distance to the west at Tickhill the crossing is made on to the tract of magnesian limestone and this area is sure to show a contrasting flora. *Turritis glabra* is an uncommon species recorded from Tickhill.

ENTOMOLOGY (G. E. Hyde, F.R.E.S.).—Not many butterflies are to be found in the area but on the Martin Beck wood side occur the three Whites, the Orange Tip in its season, the Wall, Meadow Brown, small numbers of Gatekeeper, Small Heath, Common Blue, Small Copper, Large Skipper, Red Admiral, Peacock, Small Tortoiseshell and Comma in small numbers. Many years ago this wood had numbers of Ringlet and the High Brown Fritillary was found. Much tree felling has now changed things and forestry plantations have been established. Among moths may be found the Lime, Poplar Eyed, Elephant, Small Elephant and Broad bordered Bee Hawk moths, the latter at Sandall Beat Wood. Others include the Buff Tip, Puss, Poplar Kitten, Lunar Marbled, Brown, Swallow Prominent, Lesser Swallow Prominent, Pebble Prominent, Buff Yellow Horned, Vapourer, Scarce Vapourer (in the Finningley area), Pale Tussock, Fox, Drinker, Lappet (uncommon), Emperor, Pebble Hook Tip, Green Silver Lines, White Ermine, Buff Ermine, Garden Tiger, Wood Tiger, Ruby Tiger. Among the noctuae and geometers the more interesting species include Poplar Grey, Alder, Dark Dagger, Archer's Dart, Broad bordered Yellow Underwing, Marbled Coronet, Tawny Shears, White Colon, Grey Chi, Bulrush Wainscot, Lesser Spotted Pinion, Orange Sallow, Dusky Lemon Sallow, Mullien Shark, Gold Spogoden Y, Beautiful Golden Y, Red Underwing (in small numbers), Large Emerald, Grass Emerald, numerous species of pug moths including the Nettle and several species of carpet moth.

Amongst interesting dragonflies is the Four-spotted Libellula which has been seen in Martin Beck Wood and the usual small damsel flies.

CONCHOLOGY (Mrs. E. M. Morehouse).—Around Bawtry towards Barrow Hills the following molluscs may be found: *Euconulus fulvus* Mill, *Helicella caperata* Montagu, *Helix nemoralis* L., *H. hortensis* Mull, *Jamnia cylindracea* da Costa, *Limnaea pereger* Mull, *L. stagnalis* L., *Planorbis corneus* L., *P. umbilicatus* Mill, *P. vortex* L., *P. contortus* L., *Physa fontinalis* L., *Bithynia tentaculata* L., *Valvata piscinalis* Mull, *Sphaerium corneum* L.

TEA and MEETING.—Tea, at headquarters, will be at 5-0 p.m. on Sunday. This will be followed by a short meeting for the presentation of sectional reports and for the election of new members.

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Autumn Sectional Meetings 1962

All Members and Associate Members of the Union are eligible to attend these meetings.

FLOWERING PLANT SECTION

Saturday, 29th September.—Department of Botany, Leeds University, at 2-30 p.m. Annual Meeting with tea at 4-30 p.m. Following this there will be an exhibition of specimens, either fresh or herbarium, together with colour transparencies. Will members please support this by bringing exhibits. Reports on the season should be sent to the Section Secretary by 22nd September. Plant records should also be sent to Miss Rob by that date.

ENTOMOLOGICAL SECTION

Saturday, 6th October.—Department of Zoology, Leeds University, at 2-30 p.m. Members are invited to bring exhibits and specimens for the afternoon sessions. After tea (cups of tea available, please bring sandwiches) reports for the year will be given and Officers elected for 1963. All records should be sent to the appropriate recorders by the end of September.

VERTEBRATE ZOOLOGY SECTIONS

Saturday, 13th October.—Joint Meeting in Leeds University at 3-0 p.m. Reports, Election of Officers, etc. In the evening at 6-0 p.m. it is hoped that G. R. Edwards will show his films taken in the Antarctic. For those members who bring sandwiches, cups of tea will be available.

BRYOLOGICAL SECTION

Saturday, 8th September.—Ilkley Moor. Details from Mr. Shaw.

CONCHOLOGICAL SECTION

Saturday, 15th September.—Meet at Skipton at 10-30 a.m. for Colt Park.

MYCOLOGICAL SECTION

Friday, 21st September, to Tuesday, 25th September.—The Autumn Foray.

Headquarters: The Hark to Bounty Inn, Slaidburn (Mrs. Harris). Terms 35/- per day.

The Executive will meet on Saturday, 3rd November, in the Large Committee Room, Parkinson Building, Leeds University, at 2-15 p.m.

The Annual General Meeting will be held in York on Saturday, 1st December, 1962.

Members are reminded that Subscriptions for 1962 should be paid to Mr. Shaw without delay.

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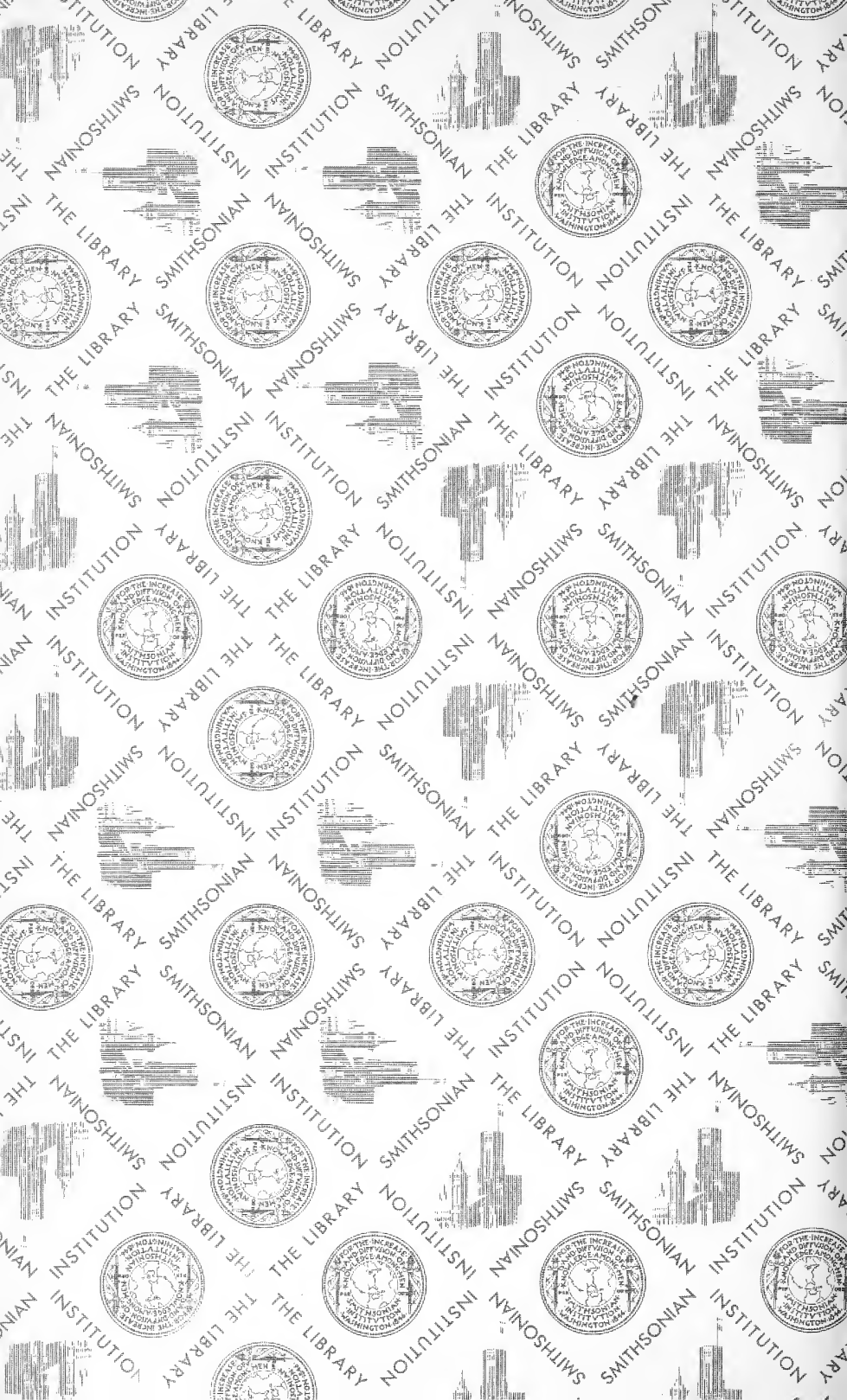
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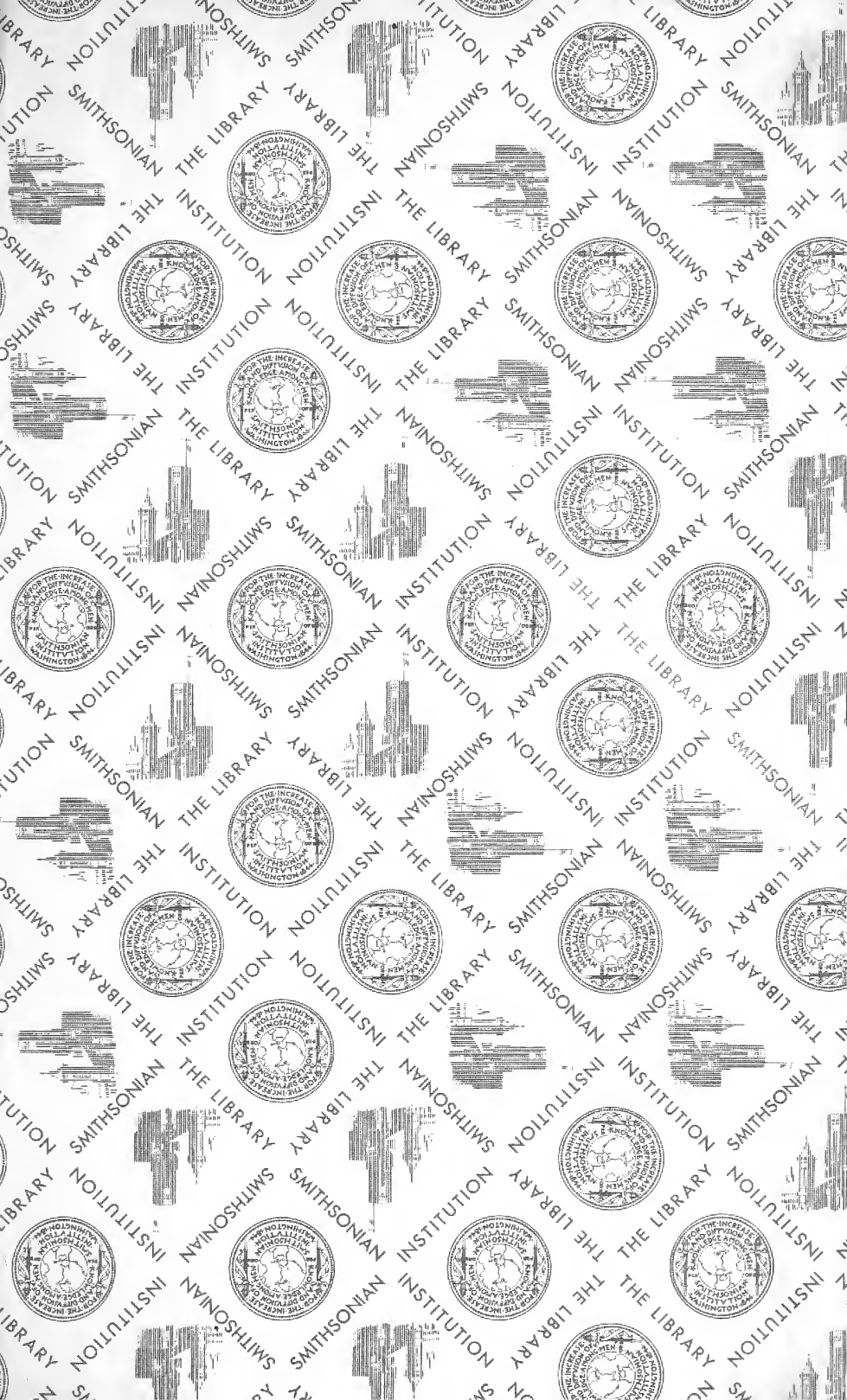
All communications to be addressed to—

The Editor, Dept. of Botany, Queen's University, Belfast.

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