



Welches Dam Wash, Autumn 1966

F. H. Perring

Nature in Cambridgeshire

No. 10 1967

*Published by
Cambridgeshire and Isle of Ely Naturalists' Trust Ltd
with the support of the Cambridge Natural History Society*

Norfolk Wildlife Park & Ornamental Pheasant Trust

GT WITCHINGHAM
near NORWICH

14 miles N.W. of Norwich on A1067

A large and exciting collection of British and European birds and animals displayed under near-natural conditions in 30 acres of beautiful grounds

BEAR · FOXES · OTTERS · SIX
SPECIES OF DEER · SQUIRRELS
LYNX · WOLVERINES · EAGLES
AND MANY OTHERS

OPEN EVERY DAY

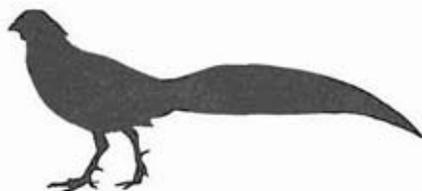
Attractive Restaurant
Large parties catered for at special rates

Admission: Adults 4/-, Children 2/6
Parties of 25—2/6 each

STAGSDEN BIRD GARDENS

at

STAGSDEN
Nr. BEDFORD



The Gardens are 5 miles west of Bedford, just off the A422 road to Newport Pagnell.

On display is a comprehensive collection of rare pheasants, waterfowl and many other birds, from parrakeets to poultry. The breeding record of rare pheasants at Stagsden is unbeaten in England.

Admission: ADULTS 3/6 CHILDREN 1/6

Free Car Park

**OPEN DAILY 10 a.m. to 8 p.m. or dusk
whichever is the earlier**

Telephone OAKLEY 2745

Heffers

Attractive free catalogues from a famous bookshop include:

Science 1967 – new and forthcoming

Secondhand and Antiquarian Books

New Books – general and fiction

Paperbacks

Call or write, giving a note of your interests

W. HEFFER & SONS LTD
PETTY CURY CAMBRIDGE

Part of our extensive service to Biologists

MIKROPS
TRADE MARK



For insects and
Pond & Marine Life

Interchangeable
Net and frames

Perfectly rigid when
erected

Nets of rot-proof
terylene

List NT/1C on
application

FLATTERS AND GARNETT LTD
309 Oxford Road, Manchester 13

Established 1901

FIELD STUDIES COUNCIL - Courses for Naturalists 1967

Many of the one-week residential field courses (held from March to November at 8 centres in England and Wales) are particularly designed for amateur naturalists. Among them are the following:—

Dale Fort Field Centre, near Haverfordwest, Pems.	
24-31 May	Bird Song and Population Study
19-26 July	Seaweeds
26 July-9 August	Archaeology: practical excavation
2-9 August	Geology and Scenery of the Pembrokeshire Coast
9-16 August	The Pembrokeshire Coast National Park: Conservation and Planning
13-20 September	Weather and Bird Movement
Flatford Mill Field Centre, East Bergholt, Colchester, Essex	
22-29 March	Easter Bird Course
17-24 May	Garden Botany
24-31 May	Whitsun Bird Course
26 July-2 August	Flowers of East Anglia
16-23 August	Woodland Ecology
30 August-6 September	Marsh, Fen and Drainage
6-13 September	Aquatic Botany
13-20 September	Nature Conservation
Juniper Hall Field Centre, near Dorking, Surrey	
22-29 March	Mosses and Liverworts
29 March-5 April	Soils
5-12 April	Conservation
30 August-6 September	1. Slugs and Snails. 2. Lichens (introductory)
Malham Tarn Field Centre, near Settle, Yorks.	
31 May-7 June	Spring Bird Course
21-28 June	Field Photography
19-26 July	1. Mountain and Moorland Plants. 2. Geology and Scenery
26 July-2 August	Archaeology
9-16 August	1. Insects. 2. The Dales National Park
16-23 August	1. Botany for amateurs. 2. Mosses and Liverworts
23-30 August	1. Conservation. 2. Soils and Soil Fauna
30 August-6 September	Geology and Scenery
6-13 September	Spiders
Oreilton Field Centre, near Pembroke	
12-19 April	Bryophyte Ecology
17-24 May	Birds and Bird Song
28 June-5 July	Birds in Summer
26 July-2 August	Mammals
16-23 August	National Park Week
30 August-6 September	Biological Field Collecting
6-13 September	Autumn Bird Course
Preston Montford Field Centre, near Shrewsbury	
29 March-5 April	Fossils and their Environment
5-12 April	Mosses and Liverworts
19-26 April	Freshwater Biology
10-17 May	Bird Course
19 July-2 August	1. Insight—Nature into Design. 2. Planning the Rural Landscape
2-9 August	1. The rocks of Shropshire. 2. Butterflies and Moths of the Welsh Borderland
23-30 August	History in the Landscape
20-27 September	1. Freshwater Ecology. 2. Lichens
Slapton Ley Field Centre, near Kingsbridge, Devon	
22-29 March	Bird Study
12-19 April	Lower Plants
19-26 April	Bird-song
24-31 May	Bird Study
31 May-7 June	Grasses, Sedges and Rushes
26 July-2 August	1. Wild Flowers of S. Devon. 2. Lower Plants
2-9 August	Conservation in S. Devon
16-23 August	1. Field Archaeology. 2. Geology and Scenery
23-30 August	1. Lichens and Fungi. 2. Woodlands
30 August-6 September	Water and the Landscape
13-20 September	Woodland Ecology
27 September-4 October	Autumn Bird Behaviour

Fees: The inclusive weekly charge is £11 10s. 0d. Members of local natural history societies or groups should enquire about Carnegie Bursaries, by which the fee may be reduced by £3 in certain circumstances. Single or double rooms are usually available.

Applications or requests for further information should be made to the wardens of the various field centres. General information and requests for full programmes should be sent to: The Publicity Secretary, F.S.C., Ravensmead, Keston, Kent.

CAMBRIDGESHIRE AND ISLE OF ELY
NATURALISTS' TRUST LTD

Registered Office: 1 Brookside, Cambridge

Telephone: 58144

Patron: The Lord Fairhaven

THE COUNCIL 1966-67

President

J. S. L. Gilmour

Vice-President

Dr S. M. Walters

Hon. Secretary (Cambs)

Mrs G. Crompton, Thriplow Farm, Thriplow, Cambs

Hon. Secretary (Isle of Ely)

A. E. Vine, Cromer Lodge, Wretham, King's Lynn

Hon. Treasurer

C. J. E. Steff, Barclay's Bank, Bene't Street, Cambridge

Hon. Assistant Treasurer

J. C. Faulkner, 48 Green Park, Brinkley, Newmarket

Hon. Press Secretary

Miss K. B. Gingell, The Studio, Biggin Abbey, Fen Ditton, Cambridge

Members

D. A. Adams

A. P. Blair

Mrs J. Bourne

J. W. Clarke

P. J. Conder

Dr E. A. Duffey

D. V. Durell

W. E. H. Fiddian

Dr M. George

W. P. Kingdon

C. A. E. Kirtland

C. F. Marshall

W. H. Palmer

K. G. Pratt

Dr J. Smart

Dr M. Stanier

Dr A. S. Watt

County Planning Department Representatives

B. Mellor (*Isle of Ely*)

G. Wood (*Cambs*)

Hon. Secretary of the Technical and Field Committees

Dr F. H. Perring

Hon. Secretaries of the Hayley Wood Management Committee

Dr O. Rackham M. Way

Hon. Secretary of the Education Committee

Dr D. A. Doling

Hon. Editor of the Journal

I. Hepburn, 8 Millington Road, Cambridge

Auditors

Peters, Elworthy and Moore

CONTENTS

	<i>Page</i>
Editorial	2
Obituaries	2
Report of the Council for 1966	3
Treasurer's Report and Statement of Accounts	11
Wicken Fen Committee Report for 1966	14
Cambridge Natural History Society Report for 1966	15
Report of 1966 Conference of County Naturalists' Trusts	16
Field Meetings in 1966	17
Thriplow Meadows Grazing Experiment VI <i>G. Crompton and S. M. Walters</i>	21
A Geological Problem at Thriplow <i>P. Evans</i>	23
A new Oxlip locality in Cambridgeshire <i>A. J. Kerr</i>	26
Bearded Tit in Cambridgeshire <i>G. M. S. Easy</i>	27
A History of the Vertebrates of Bassingbourn and Kneesworth. Part II Birds <i>P. D. Sell</i>	28
Vascular Plant Records for 1966 <i>F. H. Perring</i>	34
Weather Notes for Cambridgeshire in 1966 <i>J. W. Clarke</i>	35

EDITORIAL

The past year has been a most active one for the Trust, and it will be agreed that the accounts which follow of the various negotiations that have been in progress during 1966 for the acquisition or lease of sites make impressive reading. The climax of the year's work took place on 1 February 1967 when Mr Peter Conder, Director of the R.S.P.B., formally opened the hide which has been built for bird observation on the Welches Dam Washes.

It need hardly be stressed that with the increasing responsibilities undertaken by the Trust the need for further new members and for more public support in general becomes more urgent than ever.

I.H.

OBITUARIES

The Lord Fairhaven

Died 20 August 1966

5/ With the death of Lord Fairhaven the Trust lost a Patron whose concern for the amenity, natural beauty and interest of the English countryside had expressed itself in devoted service to our own and to other local voluntary organisations, among them the C.P.R.E. Cambridgeshire Branch and the Cambridge Preservation Society. Lord Fairhaven was a founder-member of the Trust and its first President; on the death of Captain Briscoe, Lord Lieutenant of the County, in 1947, he succeeded as Patron, and for nearly ten years gave constant and reliable support to the officers and Council of the Trust in carrying out the policy of intelligent nature conservation which was so dear to his heart. It was characteristic of him that he took the Chair at meetings of Council whenever he was able, or sent the most careful apologies if he found that he could not attend. His last public appearance in his capacity as Patron of the Trust was in April when he took the chair at the very successful meeting in the Guildhall, Cambridge during the second National Nature Week—a meeting which more than 400 people attended, and which gave him great satisfaction.

Lord Fairhaven was a reserved man to whom public activities did not come easily or naturally. He nevertheless performed such activities for causes such as the preservation of the countryside with a devotion to duty and an effectiveness which set a high standard in public service. He avoided publicity, and his benefactions were quickly and effectively made. His last and greatest was to bequeath his home Anglesey Abbey, the house and the 100-acre estate, to the National Trust with a generous legacy for maintenance. In an age when the countryside is all too readily deprived of interest and beauty in the name of economic efficiency, this great and beautiful

estate, with its woodlands and hedgerows, can be preserved as a memorial to the good taste of its owner and to those permanent values which he strongly upheld. S.M.W.

William Balfour-Gourlay

Died 20 July 1966, aged 87

Dr Balfour-Gourlay was a foundation member of the Naturalists' Trust, and identified himself with many efforts to conserve the beauty of the countryside. As an expert on trees and shrubs, he was often consulted on planting schemes in Cambridge, and those of us who know of this work will always be reminded of him when they see the trees he was instrumental in planting.

In his younger days he travelled widely to remote parts of such countries as Turkey and Chile to bring back choice plants to grow in British gardens. Indeed, up to his eightieth year he continued to visit the Alps regularly to enjoy the mountain flowers, where in his younger days he had ascended the Matterhorn, amongst other peaks. Apart from his service as a military doctor in India, during which he won the M.C., he practised medicine for only a short time, but manifested qualities of sympathy and consideration for others which have long been those admired in a medical practitioner. His varied interests drew around him a wide circle of friends, to whom he was known affectionately as 'Uncle Bill', and he was a well-known contributor to discussions at meetings concerned with natural history subjects.

He was himself an enthusiastic gardener, possessing that tranquil temperament which was sympathetic to his whole environment of plants and persons alike. He enjoyed nothing more than conducting visitors, and particularly young visitors, round the many unusual trees, shrubs and plants which he had amassed in his garden. Let us hope that these trees will long remain near the house where he lived for 40 years in Newnham to remind many of us of a gracious and kindly friend. E.A.A.

TENTH ANNUAL REPORT, 1966

The tenth anniversary year of the Trust saw a further increase and diversification of its activities. Very solid progress was made in both the establishment of nature reserves and in the field of education in nature conservation. The second half of the year was overshadowed by the death of our Patron, Lord Fairhaven. Lord Walston has kindly consented to be our new Patron.

Administration

The Brookside office has now become an indispensable part of the Trust's structure, and none of the many willing volunteers who have

worked there needs reminding that a very much larger volume of business has passed through in 1966 than ever before. Miss Hazel Marshall resigned as Office Secretary during the year and has been succeeded by Mr Andrew Rankin. The year has seen important changes of officers; Mrs Crompton took over the post of Honorary Secretary from Dr Walters, and Mrs J. Bourne became Membership Secretary. At the A.G.M. Dr Walters was unanimously elected to the Vice-Presidency of the Trust, an office which was created at the meeting by a special alteration to the Articles of Association. Mr J. C. Faulkner returned from his Australian visit in the summer, and is Acting Treasurer in the place of Mr Steff, who felt obliged to resign because of mounting demands upon his limited time. Dr Perring replaces Mr A. E. Vine as Isle of Ely Secretary. Mr Ian Hepburn is the new Editor of the Journal.

Membership

The healthy rise in membership continues (there were 114 new members during 1966 making a total of 627 compared with 541 in 1965); but what is even more important, the active participation of members in the work of the Trust has greatly increased—so much so, in fact, that it would be quite impracticable to thank by mentioning individuals all those who have given their time and services in so many ways during the year. The Council therefore takes this opportunity of thanking all helpers and supporters, and asks confidently for their renewed support in 1967.

Work of the Trust's Committees

At its September meeting, Council approved the setting up of a Business Committee (Hon. Sec. Mr J. V. Lee) to meet monthly and to formulate and guide policy on acquisitions, leases, financial matters, etc. This Committee has now drawn up terms of reference both for itself and for the other Trust Committees, and the reorganisation of business so effected promises to cope well with the ever-increasing complexity of the Trust's affairs. We are very grateful to Dr Perring and Mrs Crompton for their work in planning this re-organisation.

The work of the Field and Technical Committees and of the Hayley Wood Committee is treated separately. The Education Committee was unable to meet during the year; Mr R. S. George had regretfully resigned as Secretary owing to pressure of work. Dr D. A. Doling has been appointed to succeed Mr George, and the Committee plans to meet early in 1967. In spite of the Committee's inactivity, very important developments took place in 1966, mainly in the direction of implementing with the Education Committee of the Cambridgeshire County Council some of the recommendations in our Memorandum of 1964 on the problems of establishing Educational Nature Reserves. Some account of these developments is given in Dr Doling's report below.

Nature Trails

The Nature Trail at Wandlebury has had a good season, and we are indebted to Miss K. B. Gingell for the following report:

The Nature Trail was re-opened to the public on Saturday, 2 April, and was used extensively during the early summer. Later in the season unfavourable weather considerably reduced the number of visitors to Wandlebury.

Tall posts, used for flower paintings in 1965, were removed from the Trail and the white numbers repainted on the remaining posts. Difficulty was still experienced by some people in finding the route, and so the approach side to all posts was painted white. The use of the new display room was greatly appreciated this year. Flower paintings, by Miss M. R. Smith, table for literature, Guide books, tree charts and post cards added to the general interest of the Trail. Proceeds from sale of Guide books and post cards were approximately £70.

Throughout the summer, members of the Trust have been on duty each Saturday and Sunday afternoon and on occasional weekdays when special parties were known to be visiting the site.

Group visits were made by the following:

The Rackham School, Witchford (30 children)

King's College Choir School

Shepreth W.V.S. Over 60's Club

Colchester Archaeological and Naturalists' Society

Several small groups of school children, with teachers

The helpful co-operation of Mr and Mrs Braybrook has greatly facilitated the running of the Trail, particularly their help in selling Guide books during the week. Proceeds amounted to over £12.

Site acquisitions and leases

During the year the following properties were bought or leased:

Hall Yard Wood, Fordham

In July our offer to lease this interesting 3½ acres of old wet woodland from Trinity Hall for 21 years at £1 5s. 0d. per annum was accepted.

We are now negotiating for a larger area of woodland to the south, which includes some of the finest Alder woods known in the County.

Norwood Road, March

Our offer of £300 to British Rail for the half of this Sanctuary was accepted in June. Negotiations for the purchase of the remainder continue. The area is extraordinarily rich in bird life, and contains scrub, marsh and a small pool. No less than 216 nests were found in 1966, including those of Tree Creepers and Long-tailed Tits.

L-Moor, Shepreth

In October we signed a seven-year lease for 18 acres for which we pay £40 per annum. This is an area of rough marshland with many species of sedge.

The Washes, near Welches Dam

- (a) In September we purchased $7\frac{1}{2}$ acres of Common Wash at Coveney, part of a very large area of 80 acres just south of Welches Dam.
- (b) In July negotiations were completed for the purchase from the executors of the late Arthur Rickwood of almost 61 acres at Welches Dam, 50 acres of which is at the south end and abuts on to the Common Wash.
- (c) In November our offer for another 15 acres north of Welches Dam was accepted.

These three purchases, added to previous ones to the south of the Common Wash, give us a total holding in the Welches Dam area of 96 acres.

The Washes are an area of national importance for migrating birds, especially as winter feeding grounds. Members of the Trust will be able to enjoy the privilege of watching the birds in comfort when a hide is erected near Welches Dam early in 1967.

This represents a very solid achievement; but it is only 'the tip of the iceberg'. Nine-tenths of the complex negotiations which these successes justify can only be hinted at in the Technical and Field Committee Reports, and involve an enormous volume of work for the Officers and members of the Trust's Committees.

Meetings

The A.G.M. was held on 27 April, in the Second National Nature Week, in conjunction with a very successful joint public meeting of the Trust and the World Wild Life Fund attended by 400 people in the Guildhall, Cambridge. Lord Fairhaven presided, Mr James Fisher was our guest speaker, and an R.S.P.B. film was shown. Other meetings held during the year included in March the fantastically successful Shell Fair at Newton Hall, organised by Mrs Crompton and a group of lady volunteers, which brought in a sum of more than £900 for the Nature Reserves Fund.

Finally a meeting of a special kind should be mentioned. In March, Officers of four adjacent Trusts met our Officers at a preliminary informal gathering at 1 Brookside and discussed matters of common interest. This preliminary meeting was so successful that it was planned to hold a more formal one to which representatives of the adjacent Trusts, the S.P.N.R. and the Nature Conservancy should be invited.

Teesdale

In July the nation-wide battle against the Cow Green reservoir scheme entered a new phase with the formal enlargement of the Defence Committee to include, in addition to the Botanical Society of the British Isles, the S.P.N.R. and the Council for Nature. The

Cambridgeshire Trust has acted as host to the Secretariat since July, and has in this way made a very substantial contribution in kind to the Appeal Defence Fund; many other Trusts have supported the Fund with donations or guarantees.

Publicity

Miss Gingell has continued her work as Press Secretary and has in particular again organised the sale of Christmas Cards, etc., with another resultant profit to the Trust of about £100.

A new Membership Leaflet, designed to be used with a new brochure supplied to all Trusts by the S.P.N.R., was issued during the year. In addition, an excellent 'triptych' display board has been prepared and already used very effectively for publicity at meetings.

Report of the Field Committee

Dr Perring reports as follows:

The Committee has had a very successful year, particularly in regard to its Work Party programme. Members have responded to the plea for more helpers, and with nearly all the parties organised the task has been completed satisfactorily. The introduction of Work Party Vouchers which entitle the holders to an invitation to an annual party may have had some influence!

Although bush-clearing is the main activity, on two occasions other conservation techniques were adopted. At Barton, a party planted the village pond with water-plants from a nearby stream. Newts are abundant in this pond, which was first cleared of weed by a University Party in the autumn of 1965. At Gamlingay Cinques, Rose-Bay Willow-Herb threatens to encroach on the heathy grassland. An attempt is being made to eradicate it by hand-pulling the young shoots. The small amount of Heather at the Cinques is flourishing.

Tim Parish has had to resign as Tools Officer; we are extremely sorry to lose his invaluable help. Happily Peter Moule has agreed to take on the job in his place.

During the autumn, members of the Committee collected information on the destruction of hedgerows and hedgerow trees through careless stubble burning. About a dozen incidents were reported to the local branch of the National Farmers' Union, which promised to remind all farmers again next July of the code of practice suggested by the Ministry of Agriculture.

Report of the Technical Committee

Dr Perring reports as follows:

This has been a most significant year for the Committee. During the first ten years of the Trust's life it had been concerned with collecting information about Sites of Special Scientific Interest. This activity culminated in the publication of the Survey Report by the

County Council in 1965, and for a period the work of the Committee marked time. However, during 1966 three factors have combined to give it new impetus.

First, the acquisition or control of many new sites by the Trust means that Management Plans must be drawn up. The Committee is being asked to prepare Technical Reports for all these sites. The first 'field meeting' took place at Gamlingay Great Heath Meadow in November.

Second, the growing urgency of the acquisition of Educational Nature Reserves has meant that a new survey of the County had to be done, especially in the Isle of Ely. Tony Vine selected many possible sites around which members of the Committee were conducted on two occasions. As a result three sites have been recommended, all within easy reach of the main schools in the Isle.

Third, the Trust is being asked by the Society for the Promotion of Nature Reserves and the Nature Conservancy to help collect information about our sites both in relation to habitat and to species. The task of collecting this information must fall on the Technical Committee.

During the year membership of the Committee has been strengthened by the addition of Dr C. L. Forbes, a geologist, D. G. French and J. M. Page from the County Planning Department, and Dr P. H. Lowings of the School of Agriculture.

Besides the outdoor meetings mentioned above, the Committee met five times. Matters of outstanding importance with which it dealt included the following:

- (a) *The future of the Washes.* Because of our great concern about the Washes a meeting with the Great Ouse and Nene River Board Authorities took place during March; we were reassured that no fundamental change in management was foreseen.
- (b) *Roadside Verges.* A letter was sent to all Parish Councils in the Spring expressing our view that roadsides should be cut less frequently. About 30 replies were received expressing every shade of opinion from wholehearted support to complete disagreement. The County Surveyor has now agreed to our suggestion that in 1967 the verges should be considered in two parts: a front section which could be cut with reasonable frequency and a rear section which should only be cut once, or at the most twice, a year, and never before Hedge Parsley has finished flowering.

Report of the Education Committee

Dr D. A. Doling reports as follows:

The most important work which has been carried out has been a detailed survey of possible educational natural history sites in the

Isle of Ely, produced by Mr A. E. Vine. Owing to the arable nature of most of the region, the problem of finding suitable sites is considerable. However there are quite promising sites within easy access of March, Chatteris, Ely and Whittlesey, and Wisbech alone of the larger centres seems isolated from a good site. The Memorandum was well received by officials of the County Education Department and by teachers in the local schools. It is to be hoped that it will be possible before long to acquire one or two of the sites listed as educational reserves.

The opportunity to acquire a portion of Fulbourn Fen as an educational reserve arose towards the end of the year, and it is anticipated that the Local Authority will be able to establish it as such in 1967. It is an area covering a good variety of habitats, and its readily accessible position makes it eminently suitable for use by a considerable number of secondary schools.

The committee are unanimous in thinking that school competitions to gather the largest number of wild flowers have little educational merit and may do positive harm to some species. Accordingly, letters condemning this practice and explaining the need to conserve our wild flower population were sent out early in the year to schools and other organizations in the county.

Report of the Hayley Wood Committee

Dr Oliver Rackham reports as follows (December 1966):

This year, the Trust has been able to appoint a part-time professional Forester, Mr G. McBride, whose services we share with Cambridge University. On his weekly working days he has done much useful work in maintaining and improving the Wood. In addition, his help and advice have been most valuable in connexion with work-parties for major projects.

Parties from the Trust and the University have continued the coppicing. The third plot was unfortunately not finished in the spring and had to be completed in the autumn. Work on the fourth plot has been much more rapid owing to good luck with the weather and very large turn-outs of volunteers. Over half this plot has been cut already, and with similar support for the next work-parties it should be finished early in 1967. The Council for Nature Conservation Corps has continued work on the glade, which now covers more than an acre.

Mr McBride, assisted by a Forest School Camps party and by other voluntary helpers, has by now nearly completed a shelter in the central clearing. He has also opened out the north-east main ride by felling the small trees which overhung it from the 1968-1970 coppice plots adjoining.

A serious difficulty has arisen from the state of the main rides, which have been too wet for motor transport almost throughout the

year. In consequence, very little of the timber produced by the coppicing and the glade clearing has been sold. This may well be the normal state of the Wood, in which case it will turn out to be more difficult and expensive to manage than had originally been thought. The Royal Engineers have therefore been approached and a survey has been made to investigate the possibility of reconstructing the north-west and north-east main rides to a state in which they could be used by lorries in dry or moderately dry conditions such as can be expected in most summers. Care would, of course, be taken to avoid any action which would damage the environment or amenities of the Wood, e.g. by importing unsuitable materials or by unduly disturbing the natural flow of surface water.

A Nature Trail was set up somewhat hurriedly in the spring and provided with two guide-books, an introduction to the flora and birds for beginners, and an introduction to the ecology for those who already know something of the flora. The response of visitors has been encouraging and it is hoped to produce a revised edition of the guides next spring.

Recording work in the coppice plots has continued, but suffers from lack of volunteers. The ground vegetation was surveyed in the spring and several interesting features came to light. Some additions have been made to the lists of flowering plants and bryophytes, notably some plants of boulder-clay grassland discovered or rediscovered around the edge of the Wood. Hayley is now known to be one of the most interesting bryophyte localities in the county, with some 70 species. Recording equipment has been set up to study the climate inside the Wood.

We should like to thank all those who have taken part in any of these activities or who have contributed in other ways to an encouraging year for the management of the Wood. Our particular thanks are due to Michael Way, who has taken on the arduous job of Administrative Secretary to the Hayley Wood Management Committee.

Publications:

Hayley Wood Nature Trail: *Elementary Guide* and *Advanced Guide*. Price 1/- each, from 1 Brookside, Cambridge, or from the cottage at the entrance to the Wood.

O. Rackham, 'The restoration of old coppice', in *1966 Handbook of the Society for the Promotion of Nature Reserves*.

B. Campbell, 'Face-lifting nature', *The Countryman* 67 (1966, 271-281). A longer account of this year's work in the Wood has appeared in the third Hayley Wood Newsletter, circulated in January.

TREASURER'S REPORT 1966

The outstanding financial achievement of 1966 was undoubtedly the substantial build-up of the Nature Reserves Fund, giving the Trust the means to acquire or lease properties in many parts of the county for development as Nature Reserves. The greatest contribution came through the incredible success of the Shell Fair, and the band of helpers and organisers of this and other functions deserve our sincere congratulations and thanks.

We must acknowledge also with gratitude substantial grants from the World Wildlife Fund and the Pilgrim Trust. Such organisations tend to help most readily those who are actively helping themselves, and we remind members that a donation to the Nature Reserves Fund is also the means of attracting further support from other sources.

However, the surest guarantee of continued vigour in the Trust will be found in a steady growth of membership. The recent extension of our interests in the Isle of Ely afford wide opportunities in this respect. I am told that we have just three members in the city of Ely!

The year sees the expiry of many more seven-year covenants for the payment of annual subscriptions. These have added a most valuable increment to the basic subscription and we hope that wherever possible, the expiring covenant will be renewed.

With only one more instalment in repayment of loan to be found, we are nearing the end of the Hayley Wood operation, but as we lay aside the burden of acquisition, we find that development expenses place an increasing strain upon our resources. Much of our income at present derives from covenanted donations to the Appeal Fund, and before long, the first of these too will expire. We should be most grateful for the renewal of as many as possible of these covenants when the time comes.

John Faulkner
(Acting) Hon. Treasurer

NATIONAL TRUST

Extracts from the 1965-66 Report of the Wicken Fen Local Committee

During 1965, the officers continued work in connection with the Appeal, particularly with that part in aid of the Marshland Reserve which is to form a Memorial to Canon Charles Raven, who served for several years as Chairman of the Executive Committee, and died in July 1964. Useful discussions have taken place with the Great Ouse River Authority about the future of Commissioner's Drain on Adventurer's Fen. It is hoped that some capital expenditure may be possible in the coming year to carry out part at least of the plan for the Marshland Reserve. As a necessary preliminary, questions of drainage are being investigated. The River Authority has granted to the Trust the right to continue to abstract up to 50,000 gallons of water a day by pumping from the Lode between April and mid-October.

Good progress is being made with a new series of leaflet guides and Check-lists for the Fen.

The Warden reports:

A. Work on the Fen

No new major project has been started this year but much consolidation work on previous projects has been carried out. Half the spoil taken from Malcarse has still to be levelled, and there is also a long-term requirement to do some levelling on the '11 acre' sedge field. If the sedge fields are to be kept open they must be sufficiently level to take machines, since it is unlikely that enough skilled men will be available for much longer to do the scything.

The reed field continues to make excellent progress, but although the overall growth of reed can be increased, individual beds cannot be accurately controlled. I do not think that the field has quite reached its full potential, but I feel we are approaching our optimum area of reed growth. It is difficult to estimate the eventual output of reed; a guess might be in the order of 5000 bundles, provided we can harvest them.

B. Produce

Both the quantity and quality of reed produced shows steady improvement, but this crop does not take readily to mechanization. The Allen scythe, with reed-cutting attachment, does away with the actual hand-cutting but there is no mechanical way of cleaning and tying the reed. We shall have to find an answer to the problem of carrying out this burdensome task. Work on the sedge fields must also be mechanised a good deal further, but the Norfolk experiments with reaper and binder were only a qualified success in that the binder could only work efficiently under much easier conditions than are ever likely at Wicken. The actual production of sedge is showing a steady increase.

C. Bird Records

Bearded Tits and Bittern continue to be common winter visitors. Waxwing, despite the general 'invasion', were only on the Fen in small numbers. A Great Grey Shrike spent the whole winter on the Fen. Duck on the Mere have included: Mallard, Pochard, Tufted Duck, Shoveler and Teal, all breeding. Pintail is a possible breeding duck, and Garganey, Gadwall, Goldeneye and Smew (4 for most of the winter) have all been reliably reported. Wigeon were in their usual large numbers. One, sometimes two, Black Tern were over the Mere from the middle of May to the first week in June. A hen Marsh Harrier has been with us since the beginning of May (and is still here at the time of writing, 17 June). She is living in the reed-beds surrounding the Mere and seems to have a limited hunting area, over the Mere and its immediate vicinity. Woodcock continue to breed both on St Edmund's Fen and the Sedge Fen.

The winter 1965/6 and the Spring of 1966 have seen a great increase in Snipe at Wicken, but for waders as a whole the spring has not been outstanding, probably because there was abundant water on the Washes of the Cam and elsewhere. Nevertheless, the flooded reed-fields are most attractive to waders, and a dry spring will no doubt prove the great value of Adventurer's Fen in this respect in the future.

One foggy evening in December the Starlings moved their traditional roost from Howes' Dyke to St Edmund's Fen. They stayed there in a very confined area from the middle of December until the 31 January, when they moved back to their old roost. The ground at the St Edmund's Fen roost was deeply covered with their droppings, and the *Frangula* in this area was well over a week late in leaf, but has now recovered.

CAMBRIDGE NATURAL HISTORY SOCIETY

President: Dr R. C. West

Report for 1966

At the six General Meetings held in the Lent and Michaelmas terms the following lectures were given:

Dr E. C. Bate-Smith:	The Natural History of Smells
Dr J. D. Carthy:	Insect Communication
Prof. H. Godwin:	Background to Australian Ecology
Prof. E. J. H. Corner and Dr D. R. Stoddart:	The Natural History of the Solomon Islands
The Hon. Miriam Rothschild:	Poisons in Warningly-coloured Insects
Dr M. C. F. Proctor:	Natural History Photography

The Botanical, Zoological, Entomological and Geological sections each held six meetings during the year, making a total of 30 meetings organised by the society.

J. DRANSFIELD

Senior Secretary

Subscriptions: Life Membership: 30/-, Annual: 10/- (compounding to Life after 4 years), Members of Training Colleges (annual): 5/-, Corporate Schools (annual): 20/-, Undergraduates (3 years): 12/6.

Applications to: Mr W. H. Palmer, Homerton College (City Secretary)

Mr I. S. C. Cambell, Clare College (University Secretary)

CONFERENCE OF NATURALISTS' TRUSTS AT BOURNEMOUTH IN MAY 1966

The fourth biennial conference of County Naturalists' Trusts was attended by representatives of Trusts from the whole of Great Britain and by delegates from many national organizations. Cambridgeshire was represented by O. Rackham and A. E. Vine, and F. H. Perring was also there on behalf of the Nature Conservancy.

The most important decision taken was to investigate the possibility of merging the two largest conservation organizations—the Royal Society for the Protection of Birds and the Society for the Promotion of Nature Reserves. It was argued that a multiplicity of bodies concerned with conservation led to administrative inefficiency and confusion by the general public about the natural history movement. But it was pointed out that care would have to be taken to avoid losing the local identity of the County Trusts making up the S.P.N.R.

The Government's policy as indicated in the White Paper entitled *Leisure in the Countryside* was discussed, as were the parts played by local authorities, the Forestry Commission, the Nature Conservancy and the National Trust.

Among the many papers read dealing with practical matters were two on biological recording, an aspect of conservation often neglected. Standard schemes were proposed to facilitate the collating of data from different observers. A group of papers on woodlands included proposals for a national survey of our surviving native woods and an account of our own Trust's coppicing in Hayley Wood. The successful establishment of a large reserve in old gravel pits close to Nottingham was also described. The results of frequent public visiting were analysed in the case of Gibraltar Point, a reserve of 1200 acres visited by over 100,000 people each summer. The educational use of reserves in a densely populated area was illustrated for Northumberland, and

the protection of individual species (the Monkey Orchid and the Purple Emperor) was also discussed.

The excursions included visits to the New Forest, where the peculiar systems of management have evolved over many centuries, and to Brownsea Island where the disastrous results of 'letting nature take its course' in a reserve were seen, and also the immense labours of the Dorset Naturalists' Trust to restore the interest of the site. A full account of the proceedings of the Conference is published in the 1966 *Handbook of the Society for the Promotion of Nature Reserves*.

FIELD MEETINGS IN 1966

Seven field meetings were jointly held with the Cambridge Natural History Society. Approximate numbers attending each meeting are given in brackets.

Saturday 7 May, Hayley Wood (50)

A new Nature Trail was the main attraction for the large party visiting the wood at the first field meeting. Dr O. Rackham of the University Botany School, who devised the Trail, was there to lead the way. Printed guides with a map were available at the entrance. Armed with these, the visitors set out on the 1½ mile route which is punctuated by 14 yellow and black posts, each carrying a prominent letter. The chief features of interest in the various areas are described in the guide under the appropriate letter. At this time of the year there was plenty of interest for everyone. The bluebells were at their peak of perfection, and when mixed with a dash of Yellow Archangel, the contrast was thrilling. Although the oxlips were virtually over, occasional Early Purple Orchids caught the eye, and some young Twayblades and Birds Nest Orchids were also to be seen.

The glades and coppiced areas which have been made since the Trust bought the wood are already becoming effective habitats for insects—pairs of Peacock butterflies were seen chasing each other in the sunlight. Bird life, too, seems to have increased and the whole wood was full of song, especially the wistful notes of the Willow-warbler and the rattling song of the Marsh Tit.

All those present were impressed with the extensive work which has been carried out in the last three years.

Saturday 4 June, Knapwell (20)

On a lovely summer afternoon, the party spent an interesting time observing the many small birds of the fields and hedgerows in this

peaceful countryside under the guidance of a local ornithologist, Mr Peter Moule. He explained how, in taking part in the 'Common Bird Census', observations are marked on a large-scale map of the area, at roughly fortnightly intervals, using different symbols for nesting sites, birds seen in flight and those heard singing. At the end of the season, these records are plotted on separate maps for each species, when the territories occupied by each pair of birds can usually be clearly seen. A few nests were discreetly examined, revealing the spotted eggs of the Linnet and the Whitethroat, the sky-blue of the Dunnock, and the curious scribbled ones of the Yellowhammer.

Many members of the party were also interested in wild flowers. More than a dozen grasses were seen in flower, looking amazingly different from each other at this stage, and some fine stands of Crosswort, (*Galium cruciata*), were specially noteworthy.

Saturday 18 June, Reach (30)

This excursion was conducted by Mr J. W. Clarke who, besides being an excellent naturalist, had a detailed knowledge of the local history.

Meeting at Barston bridge, the party first visited Chalk Hill quarry, which in the past supplied much of the 'clunch' for local buildings. Despite the regrettable use of part of this pit for the deposition of Newmarket's rubbish, sufficient undisturbed grassland remains in the vicinity to support a good variety of typical chalk plants. Particularly noticeable was the fine display of Milkwort and Kidney-vetch, and the unusually lush Quaking-grass. Some fine specimens of the parasitic Broomrape, (*Orobanche elatior*), growing, as usual, on the roots of the Greater Knapweed, were seen. But the most interesting find was a patch of Yellow Vetchling, (*Lathyrus aphaca*), which is now a rare plant in the county.

After tea, a pleasant stroll was taken along Reach Lode, which forms the dividing line between the chalk and the fenland, before turning west towards the Cam. Here many typical water-plants were seen growing either along the banks or in the water itself. The irises were over, but both white and yellow Water-lilies were in full bloom. It seemed difficult to believe that this quiet and somewhat overgrown ditch had carried barges from such distant parts as King's Lynn in the past.

Saturday 2 July, Annual Orchid Count at Thriplow Meadows (20)

The first part of this excursion, on a perfect summer's day, was spent in counting the Marsh Orchids on the Trust's meadow—the fifth year of this investigation of the effect of different management treatments. As in former years, the area grazed by horses, showed the highest number, followed by the area grazed by cows. The area cut annually came next, and the lowest number occurred on the control

area. The most remarkable fact, however, was the very small number observed—only 30 per cent of those counted in 1961, and only 15 per cent of those seen in the 'best' year, (1963).

Work over, the party had tea in the adjoining meadow. Bob White Quail, which are raised there, were busy calling, but the Plovers and Snipe, which used to be so frequent, appear to have declined sharply as a result of the use of a new spray against wild oats. The light-pink flowers of the Bog Pimpernel, (*Anagallis tenella*), were happily still prominent, and *Blysmus compressus* and *Juncus compressus* are also still abundant in what is now probably their only station in the county.

The excursion ended with a long walk and cool paddle through a clear chalk stream for a few stalwarts, to see the only mainland locality in Great Britain of the Grass Poly, (*Lythrum hyssopifolia*), which after a long wet winter was more abundant than it had ever been. It was a remarkable sight to see this rare plant dominant in a large depression in a cornfield. Two associated species of liverworts, *Riccia glauca* and *R. crystallina*, were also abundantly present, and everyone felt it had been well worth the long walk.

Sunday 24 July, Morden Heath Plantation (50)

A large party, including Hertfordshire naturalists, explored first the open portion of the plantation to the north-west of the chalk pit. The paths were somewhat overgrown, but one or two new patches of Purple Milk-vetch, (*Astragalus danicus*), were noted, and number of other chalk plants seen. The gravel pit was then visited, and it was noticed that two of the earths were open and probably occupied by foxes. On the way to the top of the chalk workings the original Milk-vetch patch was observed and found to be clear of scrub and flourishing. No sign of an Iron Age encampment could, however, be detected.

Lunch was eaten near the north-east side of the plantation amongst the scattered birch trees. The actual chalk workings were then visited, Mr P. Evans and Dr P. G. Bromley explaining the conditions under which the chalk was laid down, and pointing out a series of marl intrusions caused by disturbances in the chalk beds.

The plantation to the south-east of the pit was so overgrown that the party devoted the rest of the afternoon to exploring Odsey woods, and got back to shelter just as the rain started at 4.15. The proceedings were concluded by a slightly wet bonfire tea. The leader of the excursion was Mr W. H. Fordham.

Saturday 10 September, Upware Pits (30)

Under the expert leadership of Dr F. H. Perring and in beautiful weather, the party visited three interesting pits near Upware. These are all situated on a small outcrop of Coral Rag, an unusual geo-

logical formation belonging to the Upper Jurassic period in the form of a soft limestone largely composed of coral reef. The three pits are of different ages, and one is still being worked. Apart from their geological interest, these pits provide an excellent habitat for marsh and water plants, and the various stages in the colonisation of open water could be clearly seen.

The very rare Water Germander, (*Teucrium scordium*), occurs in one of the pits. A number of plants were observed but practically no blossom. Other interesting plants noticed were the Water Parsnip, (*Sium latifolium*), and the Water Dropwort, (*Oenanthe lachenalii*).

After a picnic tea, taken on a bank overlooking the Cam, the party paid a brief visit to the clay pits called 'Elford Closes', adjoining the Old West River at Stretham. Here again a variety of typical marsh and water plants were to be seen. There was, however, no sign of the rare Water Soldier which used to grow here, but the Fringed Water-lily, (*Nymphoides peltatum*), was abundant. Some exceptionally tall specimens of the Stone Parsley, (*Sison amomum*), were also observed on the river bank.

Saturday 1 October, Fungus Foray at Longstowe (45)

The party met in pouring rain on the front drive of Longstowe Hall by kind permission of Mr and Mrs Bevan, but it was not long before the sun broke through to reveal the splendid autumn tints in the park at their best. The fungi hunt was carried out under the inspiring leadership of Dr H. Hudson, mycologist at the University Botany School. He pointed out the various species of *Coprinus* on the lawns, the edible Shaggy Ink-cap, (*C. comatus*), the rather poisonous Smooth Ink-cap. (*C. atramentarius*), and the Glistening Ink-cap, (*C. micaceus*), but warned the company that even edible fungi must be eaten very fresh. Since some of the *Coprinus* species were seen growing in rings, Dr Hudson suggested that they were subsisting on lateral roots of felled trees.

The party was shown a large bracket fungus which could be neatly sliced off its host beech-tree, and later in the Cupressus Avenue one or two Shaggy Parasols, (*Lepiota rhacodes*), by then distinctly 'off', but delicious when fresh. One brave naturalist survived the experiment of tasting a small fungus reputed to burn the tongue, whilst others attempted to detect in *Macrocystidia cucumis* various smells from cucumber to kippers.

The 'star-turn' of the foray was kept to the end when Dr Hudson led the party to the fascinating Earth Star, (*Geastrum pectinatum*), growing circularly under giant Cypresses. Despite the great variety of the fungi seen, the party was surprised to hear from the leader that 1966 had not been a particularly good year for fungi on this calcareous boulder-clay.

THRIFLOW MEADOWS
GRAZING EXPERIMENT VI

G. Crompton and S. M. Walters

The five-year period of the grant from the Nature Conservancy ended in June 1966, and the management experiment described in previous numbers of the Journal (Nos. 5-9) was concluded. A brief summary of the concluding year's work is given below.

Grazing. The two retired ponies continued to graze in Strip I and the heavy trampling effect mentioned last year was still very evident when quadrat I was recorded in July. However by the end of the year, some scattered vegetation was again visible as a result of the cessation of grazing since the middle of September. The increased grazing in Strip IV, during the maximum growing period of the vegetation, may have contributed to colonization by a variety of species amongst the large area of *Carex acutiformis*.

1966

Strip I	Strip IV	
(shut in)	With access to adjoining meadow	
1-7 May	9-16 May	22 heifers, 1 cow
1 pony (24 hrs)	17-26 May	22 heifers
1 pony (10 hrs per day)	30 June-2 July	22 heifers
25 May-6 June	5-21 July	22 heifers
1 pony (24 hrs)	4-16 August	22 heifers
1 pony (10 hrs per day)	12-22 Sept.	22 heifers
2-22 July		
2 ponies (24 hrs)		
3-26 August		
2 ponies (24 hrs)		
4-14 September		
2 ponies (24 hrs)		

Cutting. Strip II was not cut this year, due to the conclusion of the experimental period before the usual period of annual cutting, and the extreme difficulty of carrying out this part of the management.

Control. The plot of *Carex acutiformis* in Strip III was cut by hand in July. The number of colonising species had increased to 26 species in June and the area was remarkable for the number of *Lychnis flos-cuculi* in flower.

Quadrats. The species present in the four permanent quadrats were recorded between 10 and 16 July. It is hoped to publish a short analysis of the results of these records in next year's Journal, with an interim report on the three quadrats set up in an area where *Blysmus compressus* was in 1958 abundant in Strip III.

Water Level. Rainfall for the year was only slightly above average (24.5 ins. at Newton, Cambs) but the water table remained near ground level until 22 May, despite the low rainfall (ca 5 inches) in the first five months of the year; and again rose on 4 October and remained near ground level till the end of the year.

Orchid Count. The count took place on 1 July and is described in detail in the account of Field Meetings.

Strip	1966	1965	1964	1963	1962	1961
I	308	905	1222	2049	1516	1047
II	88	440	500	658	409	486
III	45	194	309	498	—	693
IV	266	651	908	1231	716	250 (est.)

The weather was good, the manner in which the count was taken was the same as before, and the numbers of counters was more than adequate—so that the explanation for the catastrophic fall in numbers of flowering *Dactylorchis* must be sought elsewhere. It can also be reasonably surmised that the four types of management treatment are not responsible since the general pattern of numbers within each strip has remained more or less constant. The strip grazed by horses or ponies has each year had the highest numbers; and the cattle grazed strip the second highest. (The difference in numbers *within* each year in these two Strips is probably due to their inherent differences—for instance in Strip IV there is a large area (ca. 30 per cent) of dominant *Carex acutiformis* which is almost absent in Strip I).

The strip that was cut annually has the same rise and fall pattern that is so marked in the grazed strips, except that in 1962 there was a slight fall when the numbers in Strips I and IV rose. The numbers in the control have probably consistently fallen. (It was not counted in 1962).

There is also no obvious correlation with the water table level except that last year the water table was the lowest since recording at weekly intervals began in 1958; however, it is possible that a correlation does exist but this could only be established if figures for both the numbers of orchids and the water level were available for a much longer period. There is also the possibility of physiological cycles within the plants and this again could only be established from counts and other relevant data over a long period.

The gradual reduction in numbers of flowering orchids in Strip III (control) could be caused by the shading effect of the increasingly tall vegetation, since *Dactylorchis* flowered abundantly in a nearby osier bed ride after the osiers were coppiced but as the canopy grew over the ride again the numbers decreased; until now no flowering takes place although leaves are still present.

The question of future experimental work on the vegetation of the meadow was discussed with the Deputy Director of the Nature

Conservancy, who suggested a number of alternative studies. However, on the advice of the authors of the original experiment, the Council of the Trust has agreed that it cannot sponsor any further complex studies, and has recommended the adoption of a simple management regime to be worked out by the Technical Committee in the light of the experience gained over the past five years.

A GEOLOGICAL PROBLEM AT THRIPLow

P. Evans

For over 300 years, botanists have been interested in Thriplow Heath and the low-lying ground along the valley below Nine Wells (452473), a group of Melbourn Rock springs about a mile north-east of Thriplow village. Mrs Crompton has recently discussed in detail the flora and historical records of the 'Peat Holes of Triplow', a name that has become a legend for Cambridge botanists. In the peat holes the flora includes a number of species characteristic of acid soils, and on the higher ground of Thriplow Heath there are typical chalkland plants together with some which commonly flourish only in acid soils. The geologists' interest is in the occurrence of this flora and of peat in an area shown on the geological maps as Chalk.

Geology

The valley above Nine Wells is on the fairly permeable Middle Chalk. The copious springs at Nine Wells (and those at Thriplow and Fowlmere) come from the Melbourn Rock, a harder chalk at the bottom of the Middle Chalk. This hard bed is broken up by joints and readily collects the water percolating down through the overlying Middle Chalk; the springs occur at the lowest points along the Melbourn Rock outcrop. Below the Melbourn Rock is a thin layer of chalky clay and below this comes the Lower Chalk, somewhat less permeable than the Middle Chalk.

Besides the Chalk, there are extensive superficial deposits, not all shown on the geological map. Most of these were formed during the Ice Age, and were mainly derived from the erosion of boulder clay (itself a product of ice action) which caps the higher ground to the south. The commonest superficial deposit is gravel; a large spread N.E. of Thriplow Church contains many far-travelled stones in addition to rounded and broken flints. Nearer the stream the soil shows more clay, and three-quarters of a mile N.E. of Nine Wells there is a wood known as Claypits Belt, where an extensive area has been excavated—according to local information this was indeed a clay working.

The superficial deposits have been discussed by Mr B. W. Sparks and Dr R. G. West. Although they are able to outline the main

events which led to the formation of the various superficial clays, gravels, etc., they draw attention to some of the problems of detail which have not yet been solved. During the Gipping glaciation (the last but one of the glacial episodes of the Ice Age), a sheet of ice travelling southwards left behind a thick deposit of boulder clay which covered much of southern Cambridgeshire. This now caps the chalk uplands along the southern and southeastern borders of the county. Subsequently the boulder clay was extensively eroded; much of the erosion took place when the climate was still intensely cold, probably at the end of the Gipping glaciation and during the last glaciation (when the region was not invaded by an ice-sheet). During the alternations of severe winter frosts and summer thaws which marked these periods of great cold, much of the boulder clay from the higher ground south of the Royston-Newmarket road (A505) was broken up and the 'waste' distributed over the lower ground to the north, including the neighbourhood of Thriplow—the waste being the stones, sand, and clay washed out of the Gipping glacial deposits. Much of this mantle of waste has since been removed by further erosion, probably mostly at the end of the last glaciation, but the Soil Survey reconnaissance has shown a large area extending nearly from Royston to Duxford where these gravels, sands, and clays still remain.

Origin of the Peat

The geological map does not record any peat near Thriplow, nor does it offer any immediately obvious explanation of the occurrence of peat fen on this area of chalk. The springs provide abundant water, but this happens in many places where no peat fen has developed. There is an apparently similar occurrence at Fowlmere, also close to the Melbourn Rock outcrop, and Professor Godwin has referred to other sites of small fens overlying the Cambridgeshire chalk. The chalk underlying the Thriplow peat-holes has a high water-table, but it seems likely that some special local circumstances must be present to permit the extensive development of peat fen.

It does not seem that the problem of accounting for the formation of the peat has so far received much attention, and it is, I suggest, worth investigating. If a few botanist and geologist members of the Cambridge Natural History Society were to combine to examine the area, it should be possible to discover what factors have led to this somewhat unusual association. On the geological side the problem seems to be to discover a mechanism for producing hollows which will hold water, the hollows being to the north of, and apparently in close relation to, the Melbourn Rock springs. If these hollows were partially silted up, ponds would form and the water would not be in completely free communication with the chalk, so that fairly acid conditions could soon develop. As an example of what may have

been the circumstances under which the peat formed, it is worth drawing attention to some depressions (which appear to be natural) that can be seen about a quarter of a mile west of Thriplow church in the valley of a stream rising from springs in the Melbourn Rock. In some of these depressions a peaty soil is now accumulating, and it may be that somewhat similar conditions prevailed when the peat of the peat-holes was formed.

There seem to be several possible ways in which these depressions could originate. They are suggestive of hollows formed by the collapse of the underlying chalk, and this could perhaps occur where water thrown out by the Melbourn Rock gets back underground and dissolves enough chalk to bring about small subsidences. The down-wash from neighbouring superficial deposits could form a nearly impervious layer in the hollows, which would then become water-logged.

An alternative, less simple, explanation depends on the superficial deposits. Little is known about the details of their distribution, but it seems possible that the mantle of Gipping waste, to which reference has been made, was not deposited below the Melbourn Rock springs, or if deposited was soon removed by the action of the springs. If so, the bare chalk would be exposed in the valley bottoms. Under the freeze-thaw conditions of the periglacial climate, the chalk might well have been so shattered that it would take water freely. With a wetter, milder climate, the water running across the mantle of waste would disappear underground as soon as it reached the chalk. The subsequent solution would favour the collapse of the surface and the formation of hollows. These hollows would soon receive enough clay and sand to make a nearly impervious lining on which peat could form.

A variant of this explanation is to suppose that at one time, perhaps when the climate was drier, the water-table in the Lower Chalk was somewhat lower than it is at present. Water flowing over the mantle of relatively impermeable waste would, on reaching the bare chalk below the springs, readily sink into the chalk, forming a swallow-hole. Comparable circumstances exist today at various places in Hertfordshire (Sherrardspark Wood, 227 137; North Mimms, 231 042; and Letchmore Heath, 148 980) where streams flowing over Tertiary deposits disappear into swallow-holes as soon as they reach the chalk outcrop. Swallow-holes often become blocked by silt (nowadays with man-made rubbish) and with a return to wetter conditions, the silted-up hollows could well become filled with peat.

These suggestions are made quite tentatively to draw attention to the existence of a problem. Whatever the explanation is, it must be able to account not only for the peat of Thriplow, but also for apparently similar occurrences elsewhere.

Besides the deposits of peat which made the Thriplow area so well known to the early botanists, there are areas away from the valley bottom which have records of plants which commonly flourish only in acid soils. These areas may well be where unmapped glacial or periglacial deposits of sand or clay overlies the chalk. Even if these deposits originally contained a fair amount of lime, there have been ample opportunities for the lime to be leached out and for an acid soil to develop. The part of Thriplow Heath N.E. of the church, to which reference has been made, is certainly covered by these superficial deposits, and the Soil Survey map places the area within the extensive tract which has soil of the brown earth type.

I am indebted to Mrs Crompton for her guidance on visits to Thriplow and for discussion of some of the problems of the peat holes.

REFERENCES

- Crompton, G. (1959). The peat holes of Thriplow. *Nature in Cambs.*, No. 2. Pp. 24-34.
- Soil Survey of England and Wales. (1965). The soils of the Cambridge district. Map facing p. 84 in *The Cambridge Region* (ed. J. A. Steers), British Association, Cambridge.
- Sparks, B. W. (1957). The Tacle gravel near Thriplow, Cambridgeshire. *Geol. Mag.*, 94, pp. 194-200.
- Sparks, B. W. and West, R. G. (1965). The relief and drift deposits. In *The Cambridge Region* (ed. J. A. Steers), pp. 18-40. British Association, Cambridge.
- Woodrige, S. W. and Kirkaldy, J. F. (1937). The geology of the Mimms Valley. *Proc. Geol. Assoc.*, 48, pp. 307-315.

A NEW OXLIP LOCALITY IN CAMBRIDGESHIRE

A. J. Kerr

Monks Wood Experimental Station

Miller Christy in his two classic papers on the oxlip (1897, 1922) defined the boundaries of its distribution in considerable detail. Subsequent work has produced relatively few alterations to this boundary and only one extension to the 'western area' has so far been noted (Dony, 1961).

In his *Flora of Cambridgeshire*, Babington (1860) refers to Eversden, Kingston, Hardwick, Hayley, Knapwell and Madingley Woods. Evans (1939) refers to the first four of these and adds Gamlingay. D. and H. Meyer (1951) in their detailed map of the western oxlip area show all of Babington's sites except Madingley Wood as having oxlips. They add Gamlingay and Buff Woods.

During the spring of 1966 I found a small patch of oxlip in woodland at Croxton Park (G.R. 52/262590). This lies just to the west of the B.1040 which roughly forms the western boundary as shown on the map accompanying Christy's paper of 1922. It should be noted that Christy does not explain how he fixed his boundary line and that

the maps in question are at a scale of $\frac{1}{4}$ in. to the mile. In all probability the line was drawn to include the larger woodlands in the area known to contain oxlip viz. Eltisle and Waresley Woods.

The occurrence of this locality raises the question of whether this is an old site perhaps overlooked by Christy or whether the oxlip in fact has colonised the site fairly recently. The reliability of the rest of Christy's boundary supports the latter suggestion as does the fact that neither Babington, Evans, Meyer nor Perring et al (1964) make any reference to it. If this is the case, seed dispersal has taken place over a distance of at least three eighths of a mile since this is the distance to the nearest oxlip site, Eltisle Wood.

REFERENCES

- Babington, C. C., 1860. Flora of Cambridgeshire.
Christy, M., 1897. *Primula elatior* in Britain, its distribution, peculiarities, hybrids and allies. J. Linn. Soc. (Bot.) 33, pp. 172-201.
Christy, M., 1922. *Primula elatior* Jacq.: its distribution in Britain. J. Ecol. 10, pp. 200-210.
Dony, J. G., 1961. The oxlip in Herts. Proc. Bot. Soc. Br. Isl., 4 (2), pp. 149-150.
Evans, A. H., 1939. A flora of Cambridgeshire.
Meyer, H. and D., 1951 in Lousley, J. E., B.S.B.I. Conf. Rep. The study of the distribution of British plants.
Perring, F. H., Sell, P. D., Walters, S. M., 1964. A Flora of Cambridgeshire.

BEARDED TIT IN CAMBRIDGESHIRE

G. M. S. Easy

An article that appeared in our 1960 Journal described the reappearance of this species at scattered localities in Cambridgeshire during the winters of 1957-59. These birds were considered to be of East Anglian origin from the Norfolk and Suffolk colonies, where pre-migratory flights (when parties gather excitedly and circle high over the reed-beds) had been observed in September and October.

Over the last ten years a pattern has now emerged of successful breeding seasons at East coast sites, followed by a westward dispersal of these populations in the autumn, and of regular visits to a number of reed-beds in East Anglia, the Midlands, the South and even the North-East from September to March. But surprisingly, the ringing recoveries in 1965 and 1966 have shown that a proportion of these visitors are in fact of Dutch origin—one Kentish flock consisted of a mixture of Kentish, East-Anglian and Dutch-bred birds.

In this county no bird has so far been proved to remain through the summer to breed at these new-found winter quarters, but while these visits continue this is always possible. Of the localities frequented by Bearded-Tits, Wicken and Fulbourn Fens seem the most likely sites for such a colony. Unfortunately, the drainage of the latter site has been recently 'improved', and also the grass has in the past been frequently burnt. Wicken Fen must therefore be our main hope for a return of the species. The extensive reed-beds of the Mere and Adventurer's Fen are exactly the undisturbed sites that this bird

requires. Col. C. E. Mitchell saw a party there in August 1962, and has suggested that a pair may have bred that summer.

The severe winter of 1962-3 hit the species badly, but a very successful breeding season followed in 1963 and in the following autumn parties were again in residence at most of the winter haunts, including Wicken and Fulbourn Fens. Thus the Bearded Tit has evolved an interesting WSW dispersal during the winter throughout its West European range—a remarkable achievement for a species which was considered sedentary for over a century.

A HISTORY OF THE VERTEBRATES OF BASSINGBOURN AND KNEESWORTH

PART II

P. D. Sell

[Owing to the limitation of space in the Journal it has not been possible to include the whole of Part II of Mr Sell's article, which deals with Birds. The notes on the species which have been omitted this year will be published in next year's Journal. Ed.]

AVES (Birds)

In the following account 119 species are recorded. 19 further species may occur within the area, having been recorded near the Royston border, but four of these are of doubtful occurrence. Of the 119 species, 53 have at some time been more or less regular residents, 16 summer residents, 14 regular non-breeding visitors and 36 irregular non-breeding visitors. Of the 53 residents, 19 have now become extinct or nearly so, 15 of these in the last fifteen years. Another 17 have declined in numbers. Of the 16 summer residents, three have become extinct and another four declined in numbers. Of the 14 non-breeding visitors, two have ceased to come, one of them in the last 15 years, and one more has declined in numbers. Only the Pheasant, Rook and Bullfinch have increased in numbers. But the Collared Dove appeared for the first time in 1966, and seems to be remaining as a resident.

I have included most of my records for 1966, and the Rev. D. A. Cox has kindly read through the manuscript and made many useful additions.

The arrangement and nomenclature of the following list is that of Vaurie (1959-1965).

1. **Podiceps ruficollis ruficollis* (Pallas) Little Grebe

One or two pairs bred in most years during the 1940's and 1950's in the pit on the Litlington boundary. My uncle has known it there for nearly fifty years. The nests were usually almost entirely made of the moss, *Fontinalis antipyretica*. Shallow polluted water and apparent absence of *Fontinalis* may be the reason for its absence in the last few years. The only record I have of it outside the summer months is a dead one picked up along the Old North Road on 24 March 1950. It had apparently hit the telegraph wires. Locally called Moorcreek.

2. *Podiceps cristatus cristatus* (L.) Great Crested Grebe

One killed on 10 January 1894 (Nunn, 1894).

[*Puffinus puffinus puffinus* (Brünnich) Manx Shearwater

One found dead under some telegraph wires at Royston on 22 September 1930 (Sage, 1959).]

3. *Oceanodroma leucorhoa leucorhoa* (Vieillot) Leach's Petrel

One obtained at Bassingbourn in the winter of 1831-1832. Presumably this is the specimen labelled Cambridgeshire now in the University Museum. One found in a dying state on 31 October 1952, near the railway station at Royston. This bird was part of a large 'wreck' that occurred in Britain during October and November of that year (Jenkins, 1958).

4. **Ardea cinerea cinerea* L. Heron

One brought to Nunn on 11 February 1893 which had choked itself with fish (Nunn, 1893). Single birds may be seen flying over the villages at any time of the year. They sometimes stop to feed in the pits and streams. Known locally as Heronshore.

5. *Branta canadensis* (L.) Canada Goose

One shot out of a party of nine on 6 June 1893 (Nunn, 1893).

6. *Anser* sp. Grey Geese

A flock passed over Royston going west on 6 November 1892 (Nunn, 1892). Parties occasionally pass over during the winter months, particularly during bad weather. I have never been able to identify them specifically, but they are almost certainly Pink-Footed Geese, *Anser fabalis brachyrhynchus* Baillon.

[*Anser fabalis fabilis* (Latham) Bean Goose

One shot out of a flock of sixteen seen near Royston on 15 January 1881 (Sage, 1959).]

7. **Cygnus olor* (Gmelin) Mute Swan

Single birds rarely seen passing over the villages. No records of breeding, although a pair stayed on the pit on the Litlington boundary for one summer in the 1940's.

8. **Anas platyrhynchos platyrhynchos* L. Mallard

Flocks passed over Royston in 1892, where it is many years since such large numbers have been seen (Nunn, 1892). Twenty years ago as a boy I was never able to find more than three or four pairs breeding in a season, but there were almost certainly more. Probably a slight but steady increase in numbers during the 1950's and 1960's, and perhaps now as many as fifteen to twenty pairs breed in a season. My uncle thinks that the number of breeding pairs has varied little in the last fifty years. The main breeding site is in the top of pollard willows, but they sometimes nest on banks of streams and pits, and one is recorded on a strawstack. The local people say that large numbers came to the fields at dusk to feed on stubble after the harvest, but the building of the aerodrome about 1937 on their main feeding area stopped them coming. During the late 1950's small parties started to come to the fields in other parts of the village. One or two may be flushed from any stream or pit during the non-breeding season.

9. *Anas crecca crecca* (L.) Teal

Several village people have told me that they have occasionally seen it. Two were shot in Mill Homes just previous to 1947. One flew from the pit on the Litlington boundary on 1 February 1958, and five flew over Newcut on 13 January 1962.

10. *Anas penelope* (L.) Widgeon

Mr R. Clark told me in 1947 that he once shot two, early one foggy morning, over the Causey fields.

11. **Accipiter nisus nisus* (L.) Sparrow-Hawk

A fine old female was brought to J. P. Nunn on 4 October 1893 (Nunn, 1893). Bred in a hawthorn bush by the river near Well Head in 1943 and 1950. On both occasions the nests were found by schoolboys and the eggs brought to me for identification. During the 1940's I occasionally saw single birds in the area. There have been no records since.

12. *Falco columbarius aesalon* (Tunstall) Merlin

One seen on 17 December 1952 near Royston per H. A. Course (Jenkins, 1958). A male flew north-west over Bassingbourn aerodrome on 26 March 1966.

13. **Falco tinnunculus tinnunculus* (L.) Kestrel
Often seen over our fields, and two or three pairs bred yearly, in the 1940's and 1950's. Suddenly disappeared at the end of the 1950's, but seen regularly again in the autumns of 1965 and 1966. The main breeding sites were holes in old trees, particularly poplars. My uncle said they regularly bred in an old barn on the Wendy boundary when he was a boy (during the First World War).
[*Circus cyaneus cyaneus* (L.) Hen Harrier
Nunn (1892) says the Hen Harrier once coursed the fens below Royston. Whether his statement is based on fact is not clear. A pair were shot at Sandon in 1845 (Nunn, July 1897) and one seen between Royston and Barley by C. Rayner on 5 November 1954 (Jenkins 1958), so the bird has occurred near by.]
14. **Alectoris rufa rufa* (L.) Red-Legged Partridge
Much less common than formerly, but still distributed over all the fields of the villages. Formerly commonly nested on top, or in the side, of strawstacks, but now almost entirely in the herbage of field margins. Locally called French Partridge.
15. **Perdix perdix perdix* (L.) Partridge
Began to lay eggs on 22 April 1893 and on 20 April 1894 (Nunn, 1894). According to the local shooters a common bird, especially in the fields towards Royston, before the war, and continued to be so throughout the 1940's. A steady decline in the 1940's has now made the coveys very scarce. They nest in the herbage of hedgerows.
16. **Coturnix coturnix coturnix* (L.) Quail
Nunn (1892) records thirteen being shot in one day about four miles from Royston. A nest was run over by a hay cutter in a field near Well Head in June 1945. Jenkins (1958) writes that since 1950 it has re-established itself in the Royston district. He mentions a record for 28 April, 1944, which is a very early date. Two pairs were present in Newent fields between 6 June and 8 August 1953, but breeding was not proved. One was heard in a field by Ashwell Street on 12 June 1953, and another in Newcut fields on 7 June 1965. One was calling all day in a field by Fen Road on 10 June 1966. It probably occurs more often than records suggest.
17. **Phasianus colchicus* (L.) Pheasant
Formerly scattered throughout the villages, but not common. Has steadily increased over the last decade and some birds have been bred for shooting. Now very common, sometimes causing a good deal of damage to newly sown corn. The main constituent of the local shooters' bag. Breeds in hedgerows, hay fields and copses.
[*Otis tarda tarda* (L.) Great Bustard
Known on the heath near Royston in the seventeenth and eighteenth centuries and according to Sage (1959) last seen there in 1808. It is possible that the area of Bassingbourn adjacent to the present heath was not then arable, and in any case the bird almost certainly wandered over the area.]
18. **Rallus aquaticus aquaticus* (L.) Water-Rail
One was killed on telegraph wires on 4 April, 1893 (Nunn, 1893). One seen in a ditch by Fen Road in the early 1940's. A second shot on the Whaddon boundary on 22 March 1947. A third present in the moat by the church for at least a week in December 1952. A fourth in a ditch in Newcut fields on 11 January 1953 and 15 March 1953. One seen by W. M. Tingay at Kneesworth in January and December 1951. One by the pit on the Litlington boundary on 5 December 1954.
19. **Crex crex* (L.) Corncrake
One killed on telegraph wires on 17 April 1893 (Nunn, 1893). Six eggs brought to Nunn on 9 August 1893 (Nunn, 1893). Appeared to be plentiful in September 1893 (Nunn, 1893). First heard on 3 May, 1894 (Nunn, 1894). Eggs found on 9 May, 1894 (Nunn, 1894). An immature bird shot as it flew from the corn in Newcut fields during the harvest, on 29 August 1947.
20. **Gallinula chloropus chloropus* (L.) Moorhen
Throughout the villages, breeding wherever there is permanent water. The number of nests seen in 1965 and 1966 suggest that there is a decline in numbers.
[*Charadrius hiaticula hiaticula* (L.) Ringed Plover
H. A. Course saw one on 7 and two from 8 to 10 September 1954 at the Royston Sewage Farm (Sage, 1959).]

21. *Eudromias morinellus* (L.) Dotterel

According to Nunn (1892) it used to visit us [fields about Royston] in great numbers in the spring and autumn, but they now only just look at their old quarters, and that only at very wide intervals. Four killed on 4 September 1893 (Nunn, 1893). They still visit the nearby fields of Melbourn in the spring.

22. **Pluvialis apricarius* (L.) Golden Plover

Thousands occurred in the area in the 1840's, none in the 1850's, considerable numbers in the 1890's, and unbelievable numbers in the winter of 1895-6 (Nunn, July 1897). Small numbers are now often seen with flocks of Lapwings in winter. The numbers on the aerodrome during the 1940's were sometimes very large (up to 1,000). As the aircraft became faster the birds did much damage to them as they landed and took off, so that the authorities fired rockets to frighten them away. The Lapwings moved to the surrounding fields, but the Golden Plovers never returned in such large numbers. During the late snow on 2 March 1946 numbers were feeding in the Recreation Ground in the village. In 1965 I saw a flock of 200 near the aerodrome.

23. *Pluvialis squatarola* (L.) Grey Plover

One killed flying into some telegraph wires at Royston in July, 1890 (Nunn, 1890), and another met a similar fate in the same locality in spring of 1893 (Nunn, July 1897). Rev. D. A. Cox saw ten flying west, calling, on 8 October 1966.

24. **Vanellus vanellus* (L.) Lapwing or Peewit

In numbers never before witnessed in the winter of 1895-6 (Nunn, July 1897). Flocks over our fields throughout the non-breeding season, sometimes very large ones. There is a tendency to use the same fields for breeding year after year, but it may depend on the crops being suitable. They change their feeding grounds at dusk with great regularity.

[*Calidris minuta* (Leisler) Little Stint

One on 1 September and two from 6 to 12 September 1953 on the Royston Sewage Farm, according to H. A. Course (Jenkins, 1958).]

25. *Philomachus pugnax* (L.) Ruff

Two I saw on the Royston Sewage Farm on 13 September 1953 several times flew over the Kneesworth boundary. Royston Sewage Farm: six on 28 August 1953, eight on 6 and 7 September, single birds noted until 15 September, H. A. Course and A. R. Jenkins; four on 25 August 1956, A. R. Jenkins (Jenkins, 1958). Sage (1959) gives up to two birds for this locality from 15 August to 5 September 1954 and two or three from 13 to 17 August 1957.

26. *Tringa erythropus* (Pallas) Spotted Redshank

One present at the Royston Sewage Farm on 13 September 1953 several times flew over the Kneesworth boundary.

27. *Tringa totanus* (L.) Redshank

Birds that visit Royston Sewage Farm often fly over the Kneesworth fields.

[*Tringa nebularia* (Gunnerus) Greenshank

Two on 18 August 1956 on the Royston Sewage Farm according to H. A. Course (Jenkins, 1958). In 1957 Greenshanks were seen there on no fewer than ten occasions between 31 July and 8 September, the maximum being five on 15 August (Sage, 1959).]

[*Tringa ochropus* (L.) Green Sandpiper

According to H. A. Course, it occurs at Royston Sewage Farm when conditions are suitable, with a minimum of six on 7 September 1954 (Jenkins, 1958).]

[*Tringa glareola* (L.) Wood Sandpiper

One was present on Royston Sewage Farm from 25 to 28 August 1956 according to H. A. Course (Jenkins, 1958).]

28. *Tringa hypoleucos* (L.) Common Sandpiper

Scarce in the Royston district according to H. A. Course (Jenkins, 1958). I have never seen it there. One by the Manse, South End during the spring of 1964, (Rev. D. A. Cox).

29. *Numenius arquata arquata* (L.) Curlew

One seen over Kneesworth on 9 April 1951, by W. M. Tingay. One with Lapwings at Kneesworth on 11 November 1952. Nine seen on 6 September 1953 and one on 18 March 1956 by H. A. Course over Royston (Jenkins, 1958). One over High Fields on 6 November 1956. Three over Newcut on 2 March 1958. One reported to me as having been seen on the aerodrome in November 1966.

30. *Numenius phaeopus phaeopus* (L.) Whimbrel
Rev. D. A. Cox heard them calling on night migration on 28 May 1966.
31. **Scolopax rusticola* (L.) Woodcock
One shot near Kneesworth in a field of Brussels Sprouts on 5 December 1953. Single birds by the pit on the Litlington boundary on the 1 and 9 February 1958, and 7 November 1959.
32. *Gallinago gallinago gallinago* (L.) Common Snipe
Bred at Mill Homes in the early 1940's. Probably bred there in previous years and perhaps for a few years after, for I often heard it 'drumming' during the breeding season. Single birds may be flushed from any damp spot during the winter months. They seem, however, to occur less frequently than they used to.
[*Gallinago media* (Latham) Great Snipe
One shot near Royston on 30 August 1893 (Nunn, 1893).]
33. *Limnocyptes minimus* (Brünnich) Jack Snipe
Mr R. Clark told me in 1947 that he had in the past occasionally seen it in winter.
34. *Burhinus oedicnemus oedicnemus* (L.) Stone Curlew
In the 1840's it was fairly common in the open fields, but as agriculture improved it gradually became scarce and by 1897 it was rare. In 1894 a pair bred in Bassingbourn (Nunn, July 1897). One or two pairs may breed every year in the fields towards Royston. A flock of twenty-two was seen by H. A. Course in the autumn of 1951 near Royston (Jenkins, 1958). When I cycled regularly to Royston between 1944 and 1948, I often heard it calling, but I was never able to find the bird when I searched for it at a later date. The farm labourers who work in the area know it well, describing accurately both it and its eggs.
35. **Larus ridibundus ridibundus* (L.) Black-Headed Gull
One brought to Nunn on 8 January 1894. He speaks as though gulls were rarely seen (Nunn, 1894). Common over our fields in winter, where it may be seen feeding behind the plough. Occasional birds may also be seen in the summer months.
36. *Larus fuscus* (L.) Lesser Black-Backed Gull
One flying over Newcut fields on 3 October 1954. One flying over the Recreation Ground on 28 December 1954. Four going north-east on 18 March 1966, (Rev. D. A. Cox). One flying west over Newcut fields on 11 September 1966.
37. *Larus argentatus argentatus* (L.) Herring Gull
Five at Royston on 1 September 1884 (Sage, 1959). Can sometimes be seen on winter evenings passing over at a great height in an easterly direction. I saw one over Fen Road on 13 August 1966.
38. **Larus canus canus* (L.) Common Gull
One brought to Nunn on 8 January 1894. He speaks as though it were rarely seen (Nunn, 1894). Now fairly common over our fields in winter, especially in bad weather.
39. *Rissa tridactyla* (L.) Kittiwake
One picked up dead on 20 December 1892 (Nunn, 1893).
[*Chlidonias niger niger* (L.) Black Tern
Two at Royston Sewage Farm on 27 and 28 September 1957 (Sage, 1957).]
[*Sterna sandvicensis sandvicensis* (Latham) Sandwich Tern
H. A. Course saw one near Royston on 8 May 1940 (Sage, 1959).]
40. *Sterna hirundo hirundo* (L.) Common Tern
One on 20 October 1893 (Nunn, 1893).
[*Sterna albifrons albifrons* (Pallas) Little Tern
Two shot near Royston in 1882 (Sage, 1959).]
41. *Plotus alle* (L.) Little Auk
One found alive near Royston in 1846 (Sage, 1959). One killed on telegraph wires on 23 November 1893 after a great storm the day before (Nunn, 1894). One brought to Nunn alive in the autumn of 1894 (Nunn, July 1897).

42. **Columba palumbus palumbus* (L.) Wood Pigeon
Mentioned by Nunn (1892). Building a nest on 28 February 1893 (Nunn 1893). A common resident, breeding from March to September wherever there are thick hedgerows or thickets. Numbers appear to increase greatly in winter, especially during bad weather, when huge flocks feed on the green crops. Except during foggy weather the great majority roost in the woods at Abington Pigotts, Wendy and Wimpole. A few stay in the woods at Kneesworth.
43. **Columba oenas oenas* (L.) Stock Dove
In the 1940's a common breeding species in old trees throughout the villages. There was a steady decline in the 1950's and I now know of no breeding pair. Last breeding record was in 1961 at North End. Although many old trees have been cut down, it is not the cause of their disappearance, for many of their old nesting sites, where they bred year after year, are still available. Still occasionally seen in winter, alone or with flocks of Wood Pigeons. Called locally Blue-Rock Pigeons. A nest was found in an old Magpies' nest near Fen Road, in 1946.
44. *Streptopelia decaocto decaocto* (Friv.) Collared Dove
Heard occasionally by South End in May and four were present there from mid-August to the end of October 1966 (Rev. D. A. Cox). Five on 29 October and at least 20 on 11 November 1966 were seen feeding on barley stubble near Shadbury Lane.
45. **Streptopelia turtur turtur* (L.) Turtle Dove
First arrival on 26 April 1893 (Nunn, 1893) and 27 April 1894 (Nunn, 1894). A common summer resident breeding in hedgerows and thickets. My first arrivals are between 21 April (1947) and 6 May (1953).
46. **Cuculus canorus canorus* (L.) Cuckoo
One egg taken from the nest of a Hedgesparrow and another from the nest of a Greenfinch on 20 June, 1893 (Nunn, 1893). A regular summer resident, varying in numbers from year to year. First arrival between 7 April (1950) and 4 May (1956).
47. *Asio otus otus* (L.) Long-Eared Owl
Nunn (July, 1897) says they were breeding in the plantations about the border, where they were a terrible enemy to small birds. He said they came to this area after being driven from the woods of Kelshall by the gamekeepers. In recent years they have been recorded by W. H. Fordham from such plantations at Odsey.
48. *Asio flammeus flammeus* (Pontoppidan) Short-Eared Owl
One brought to Nunn on 29 October 1892 still alive (Nunn, 1892). Arrived on 2 September 1893 (Nunn, 1893). Occasionally seen in turnip fields in the autumn (Nunn, July 1897). Seven seen on rough land near Royston on 25 December 1937 (Sage, 1937). Two in Newcut fields during February 1950 were finally shot.
49. **Athene noctua vidalii* (A. E. Brehm) Little Owl
First recorded in the region at Ashwell in 1877 (Sage, 1959). One brought to Nunn on 12 March 1894. He had never known it to breed (Nunn, 1894). Common throughout the 1940's and 1950's, breeding in old trees, on stacks and in buildings. Numbers have declined sharply in the last few years, but one frequented some trees just over the Abington Pigotts boundary in January 1966 and I saw one in a field by Fen Road on 22 October 1966.
50. **Strix aluco sylvatica* (Shaw) Tawny Owl
The population of the villages has probably remained fairly constant at something like a dozen to fifteen pairs over the last twenty-five years.
51. **Tyto alba alba* (Scopoli) Barn Owl
Pair with young on 23 October 1892 (Nunn, 1892). Frequent throughout the 1940's, and as late as 1954 I noted that there were probably between twelve and fifteen pairs in the area. Numbers have gradually declined since that date, and I think it is now extinct. Their old breeding haunts are still available.
52. *Caprimulgus europaeus europaeus* (L.) Nightjar
Never common in the area; only breeding record is for 1845 (Nunn, July 1897). I would suspect all the records were for Hertfordshire, although Mr R. Clark told me in 1947 he had seen it in the past. An injured bird was picked up by H. A. Course near Royston on 12 May 1937 (Jenkins, 1958).

53. **Apus apus apus* (L.) Swift
Departed on 20 August 1893 (Nunn, 1893). First arrival on 6 May 1894 (Nunn, 1894). Rare at Royston in the 1840's, but breeding freely by the 1890's (Nunn, 1897). Common summer resident, breeding along the rafters of suitable buildings. My first arrivals between 27 April (1960) and 6 May (1953).

54. *Alcedo atthis ispida* (L.) Kingfisher
At least one or two pairs bred along the river between Well Head and Wendy, and another at Kneesworth, every year until 1962. Single birds occasionally seen elsewhere. None seen since the very severe winter of 1962-1963.

[*Upupa epops epops* (L.) Hoopoe
A male shot in the neighbourhood of Royston on 18 April 1865 (Norman, 1866).]

55. **Picus viridis viridis* (L.) Green Woodpecker
Frequently heard, but not known to breed (Nunn, July 1897). In the 1940's and 1950's single birds often seen or heard, a pair sometimes breeding in the old orchards. Not seen in the last few years.

56. *Dendrocopos major anglicus* (Hartert) Great Spotted Woodpecker
One brought to Nunn in February 1893 (Nunn, 1893). Occasionally seen in the 1940's and 1950's. Sometimes bred in the grounds of Kneesworth Hall, and the local people tell me they have occasionally seen it do so in the old orchards. According to H. A. Coarse it is more numerous than the Green Woodpecker in and around Royston (Jenkins, 1958). Not seen in the last few years.

57. *Dendrocopos minor comminutus* (Hartert) Lesser Spotted Woodpecker
Occasionally seen in the 1940's and 1950's. I have never seen a nest, but the local people tell me it has bred in old orchards. Single birds seen at Royston in most years (Jenkins, 1958). Rev. D. A. Cox saw a pair in the Rowsies in the summer of 1965 and one near the Manse, South End on 7 April 1966.

58. *Riparia riparia riparia* (L.) Sand Martin
Regularly seen passing through on migration.

59. **Hirundo rustica rustica* (L.) Swallow
Usually arrives about 15 April (Nunn, 1892), which they did in 1893 (Nunn, 1893). Arrived on 10 April 1894 (Nunn, 1894). Fairly common summer resident breeding on the rafters of barns. My first arrivals between 6 April (1955) and 28 April (1960). Thirty flying south-east at dusk on 23 September 1953. Rev. D. A. Cox has seen it regularly in the second half of October and sometimes in early November.

60. **Delichon urbica urbica* (L.) House Martin
Fairly common summer resident breeding under the eaves of buildings. I have no data, but it seems to be less common than it used to be. First arrivals between 28 April (1960) and 5 May (1954). Latest date 18 October (1953).

VASCULAR PLANT RECORDS

F. H. Perring

(Records are for 1966, unless otherwise stated)

Polystichum aculeatum (L.) Roth. Area wall below grating, N. Brink, Wisbech. 10 August. R. Clarke. Almost certainly a recent introduction. Previously known from Gamlingay where it has long been extinct.

Cardamine flexuosa With. R. Kennett nr. Red Lodge. October, 1965. M. O. Hill. Otherwise known only near Cambridge.

- Cerastium semidecandrum* L. Lattersey Hill, Whittlesey. 18 May. F. H. Perring. Only recent record from the Fens.
- Spergularia rubra* (L.) J. & C. Presl. Old tennis court behind King's Fellows' Garden, Cambridge. 26 April. S. M. Walters. First record near Cambridge: presumably introduced.
- Geranium lucidum* L. Knight's End, March. June. M. P. Hart. The only known record from the Fens.
- Medicago minima* (L.) Bartal. Chippenham Gravel Pit. June. Mr and Mrs A. Palmer. Otherwise only known at Isleham.
- Lathyrus aphaca* L. Reach. 18 June. J. Clarke. The third recent new record for this attractive pea.
- Lathyrus nissolia* L. Green lane near Longstowe. 20 June, 1965. O. Rackham.
- Petroselinum segetum* L. Koch. Stubble of a field cropped with mustard beside Exning Road, Burwell. September. J. W. Clarke. Few recent records: perhaps declining.
- Urtica dioica* L. forma *angustifolia* (Wimm. & Grab.) Moss Green lane to Upware North Pit. 15 August. A new locality for the stingless form of the nettle.
- Myosotis ramosissima* Rochel. Lattersey Hill, Whittlesey. 18 May. F. H. Perring. The only locality known in the Fens.
- Galinosa ciliata* (Raf.) Blake. Sidings at Wisbech Station. 18 August. R. Clarke. Previously known only from Cambridge.
- Eleocharis uniglumis* (Link) Schult. The Washes near Manea. 22 June, 1965. S. M. Walters. Second locality from the Washes; probably overlooked.
- Carex rostrata* Stokes. N. bank of Burwell Lode, Upware. 30 May. S. M. Walters. First record for 17 years.
- Phleum arenarium* L. Chippenham Gravel Pit. 10 June. R. Sibson. Otherwise only known at Isleham.

WEATHER NOTES FOR CAMBRIDGESHIRE 1966

J. W. Clarke

Rainfall in 1966 was just about average at Swaffham Prior (21.9 ins.). The driest months of the year were January, March and September, all with less than 1 in. of rain. September was particularly fine with 0.53 ins., falling on four days only. June with 3.3 ins. had the highest rainfall, but almost all of this fell in thunderstorms on a few days towards the end of the month. October with 2.96 ins., which fell on

19 days, was throughout wet and unsettled, and December also was wetter than usual. Fog and mist were markedly absent during the autumn, due no doubt to the prevalence of westerly 'Atlantic' conditions.

No prolonged cold spell developed during the early months of the year. There were a few frosty days with snow lying in mid-January, and mean temperatures were slightly below average for the month. February and March were both warmer than usual. The summer produced rather mixed temperature records. Very high temperatures occurred during the first few days of May, but the rest of the month was cooler than usual. The first half of June was hot and dry, as were also the first few days of July, but this month as a whole was cool and 80° was, as in 1965, never reached. In August a heatwave developed on the 12th and continued until the 22nd, with the temperature reaching the eighties on several days and the highest temperature of the year (83°) being reached on the 20th. The first half of September was also generally fine and warm. June was the warmest month of the year, and it is interesting to note that it has proved warmer than July in five out of the six summers since 1959.

<i>Number of days over 80°F</i>	7
<i>Number of days over 70°F</i>	52
<i>Number of days with a maximum under 32°F</i>	9
<i>Number of nights with a minimum under 32°F</i>	44

Weather Records at Swaffham Prior 1966

Temperature °F

<i>Month</i>	<i>Mean max.</i>	<i>Mean min.</i>	<i>Highest</i>	<i>Lowest</i>	<i>Rainfall ins.</i>
January	38	33	51 on 29th	16 on 19th	0.87
February	46	38	54 on 5th, 8th	27 on 18th	1.66
March	50	36	58 on 20th	26 on 20th	0.30
April	52	40	72 on 30th	28 on 14th	1.90
May	60	41	80 on 2nd	36 on 30th	1.25
June	71	53	81 on 10th	46 on 2nd, 30th	3.30
July	67	51	78 on 23rd	49 on 19th	2.70
August	68	54	83 on 20th	44 on 24th	2.21
September	67	54	77 on 6th	42 on 20th	0.53
October	58	49	65 on 3rd, 14th	36 on 26th	2.96
November	43	36	61 on 7th	30 on 24th	1.63
December	45	38	55 on 29th	26 on 26th	2.59
Annual Means and Totals	55.4	43.5			21.90

When in
CAMBRIDGE . . .

do as the knowledgeable
do! Shop, for fine clothing
and footwear . . . for modern
furniture and furnishing
accessories . . . for china
and glassware . . . for cosmetics
. . . for luggage and sports
equipment and toys—at that
most delightful and rewarding
of shops—

Joshua Taylor

CENTRE OF CITY
CAMBRIDGE

Why the Trust has been formed

The countryside is changing rapidly before our eyes. Some change is, of course, inevitable; but nearly all the alteration is tending towards a loss of variety, interest and beauty, and the destruction of areas still in a natural and semi-natural state. There is a very urgent need for a local organisation to take action, before it is too late, to safeguard what remains, and to encourage the intelligent conservation of nature.

Aims of the Trust

To record and study the chief places of natural history interest in Cambridgeshire and the Isle of Ely. This interest is not confined to botany and zoology, but should include geology, archaeology and local history.

To protect these places if they are threatened.

To acquire and administer any such place as a Local Nature Reserve, if this action is the most appropriate method for conservation.

To co-operate with other local and national bodies with interests in natural history and nature conservation.

To encourage interest and understanding for an intelligent policy of nature conservation, which should not run counter to the best interests of agriculture, forestry, sport, and other rural industries and occupations.

Membership

Minimum subscription: Ordinary £1 p.a., Life £20. Children and Students 10/-. Full particulars may be obtained from the Hon. Sec., 1 Brookside, Cambridge.

FOR THE ENTOMOLOGIST

Apparatus, Books, Cabinets.

Price lists of the above are issued from time to time, so if you would like to receive regular issues please send me a postcard stating your interests

L. CHRISTIE

137 Gleneldon Road, Streatham, London, S.W.16, England
(Postal business only)

*Official agent for publications of the Amateur
Entomologists' Society*