



Beechwood on Worts Causeway

W. H. Palmer

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CAMBRIDGESHIRE AND ISLE OF ELY
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CONTENTS

	<i>Page</i>
Editorial	4
Report of the Council for 1971	4
Treasurer's Report	11
Wicken Fen Committee Report for 1971	12
Cambridge Natural History Society Report for 1971	14
Field Meetings and Open Days in 1971	14
A Survey of Cambridgeshire Hedges <i>G. F. Peterken</i>	19
Management Experiment on Thriplow Meadows <i>G. Crompton and I. Hepburn</i>	21
History and Flora of Thriplow Meadows <i>G. Crompton</i>	25
Oenanthe Silaifolia Bieb. at the Ouse Washes, Cambridgeshire <i>C. J. Cadbury</i>	33
The Fairy Shrimp at Fowlmere <i>Martin G. Walters</i>	35
Vascular Plant Records <i>F. H. Perring</i>	40
Weather notes for Cambridgeshire 1971 <i>J. W. Clarke</i>	41
List of Additional Trust Members since December 1970	43

EDITORIAL

After the very full programme of events organised in 1970, the past year has been one of consolidation and a certain amount of reorganisation. Nevertheless, we have been able to add some important new reserves to our list and have acquired some more land in the Ouse Washes.

It is highly satisfactory to be able to report that we have reached the original target of £10,000 for the Ouse Washes Appeal, although we are still glad to receive further donations. There has been a steady and encouraging increase in membership during the year, and we very much hope that we shall not lose any members as a result of the increased subscription rates. The expenses of administering the Trust have greatly increased, and we have had no alternative to a general increase in subscription rates.

FIFTEENTH ANNUAL REPORT 1971

Administration

1971 has been a year of consolidation after the rapid growth of the Trust over the last few years. The administration of its affairs settled down again after the change of Secretary and it is now collecting its resources to be ready for a further stage of development. Council members to retire during the year included Mr D. Alexander, Mr A. P. Blair, Mr D. Durell, Mr W. Kingdon, Mr C. Marshall and Mr M. Schofield. The Trust acknowledges the great debt that it owes to these for all the time and help they have given during their membership.

The Business Committee has suffered a severe loss by the retirement of its Chairman, Dr F. H. Perring, who moved away to live in Northamptonshire. His constant activity and sparkling ideas are very much missed; the prosperity of the Trust was largely a result of his energy and guidance. The Trust is very fortunate to have Dr S. M. Walters as the new Chairman of its Business Committee. He is a founder member of the Trust and Vice-President and was its first Secretary. Mr T. Worthington was succeeded by Mr Michael Weale as Secretary of the Education Committee on leaving the County, and Mr Percy Chapman succeeded Mr Clement Marshall as Secretary of the Field Committee. Mr R. Childs gave up his position of Chairman of the Isle of Ely Committee in favour of Mr S. A. Whitteridge.

More local management committees for Trust reserves were set up to decentralise as much work as possible. They now exist for the following reserves: Hayley Wood, Knapwell and Papworth Woods, Heydon Pit, Shepreth, Thriplow, Fulbourn, Devil's Dyke, Fordham, Upware, Ouse Washes, Bassenhally and Norwood Road.

The administrative work load increased steadily through the year with

membership and more land, and grateful acknowledgement is made to all who gave such devoted and valuable assistance in a voluntary capacity, both in the field and in the office.

Membership

At the end of 1971 this stood at 2,180, an increase of about 300 during the year.

Ouse Washes Appeal

It is good to record the passing of the target of £10,000 set for this appeal. In addition to the many contributions from members and institutions we were fortunate in receiving substantial donations from both national and international offices of the World Wildlife Fund. The gross total received by the end of the year was about £11,560.

New Reserves

A lease was concluded for the beechwood on Wort's Causeway, Cambridge, from the County Council; this 12-acre reserve contains some interesting plants and is an attractive amenity close to the City and within walking distance of Wandlebury, the Roman Road, Cherry Hinton pits and Stapleford pit.

A management agreement was concluded with Papworth Village Settlement for Papworth Wood; this forms an interesting addition to our west Cambridgeshire woodland reserves. An agreement was also made with the local authority to help safeguard Goosetree Heronry near Guyhirn.

A further 32 acres of land in the Ouse Washes at Coveney was purchased to add to our existing reserve, thus bringing our holding there to 330 acres. The freehold of Hall Yard Wood, Fordham was purchased from Trinity Hall.

Reserve Management

The Trust now manages 730 acres of reserves of which 430 acres are freehold, 130 acres leasehold and 170 acres under management agreements. At the Ouse Washes, a second hide was erected, on the Ely side of the reserve at the end of Way Head Drove (Straight Drove), between Coveney and Little Downham. More extensive grazing and haymaking improved the condition of the reserve and brought in increased revenue, and some essential drainage was done. Our voluntary warden, Mr Brian Ribbands, gave very valuable assistance and we are grateful to him, together with the R.S.P.B. warden of the adjoining land, Mr Jeremy Sorensen.

Coppicing continued at Hayley and Knapwell Woods and experiments continued in protection of regrowth and herbaceous plants from Fallow

deer. We are in great debt to Jo Burgon and the members of the Cambridge Conservation Corps for work done at these and other reserves. Scything and scrub cutting on sections of the Devil's Dyke to protect and encourage the rich chalk grassland flora and its associated insects went well. Work to protect a very rare plant at Upware was started and local schools continued to make good use of Fulbourn Reserve for teaching purposes.

In addition to these more special activities a great deal of routine maintenance by way of fencing, surveying, and recording was done. Management work at our reserves must intensify if we are to look after the wildlife they harbour and support satisfactorily.

Nature Trails

Those managed by the Trust include Hayley Wood, Wandlebury, Coe Fen and Paradise (Cambridge), Roswell Pits (Ely), Norwood Road (March). Ely Urban District Council have agreed to extend the Ely trail to double its original length.

Fund Raising

Christmas stationery sales were slightly up on the previous year's figures at a gross total of about £1,400 including £250 for the Christmas draw. There is no doubt that the adverse economic conditions made their mark on sales; although we had more members individual orders tended to be smaller in amount. The sale of Christmas cards, notelets and calendars gave some ground to novelties such as tea towels, notepads and writing cases, on which the profit margin was less generous.

Garden openings under Miss Gingell's practised guidance encountered bad weather again on several occasions, but participation in other events such as Village Shows and Fairs was rewarding with both money and publicity.

Liaison with other bodies

The Trust continues to keep in touch with local bodies interested in conservation through the Countryside Advisory Working Party.

Reports from Committees:

Field Committee

Mr P. C. Chapman reports as follows:

The basic function of the Field Committee is to keep an eye on all the Trust's reserves, and on Sites of Special Scientific Interest, The larger and more important reserves have Local Management Committees, which ask for a labour force from the Conservation Corps when it is needed. There are about a dozen of these Committees, the most recent of which is that

responsible for the North Pit at Upware. We are very grateful to the owners, Greens of Soham, for their interest and co-operation in this matter. The Warden of Wicken Fen, Lt-Col. C. E. Mitchell, is the Chairman of this Committee, and conservation work at the pit has begun.

The County is divided up into the Village College areas and we are appreciative of all the help we get from the Colleges. Each area has a representative on the Field Committee, and there is also a representative from the Isle of Ely. These representatives organise watch-dogs for their sites, who keep an eye on these and send in a report at the end of each year. Each representative has a list of Trust members in his area, and there is a film show, talk and display at each Village College during the winter. There are similar programmes in Cambridge itself and at various centres in the Isle of Ely.

The Conservation Corps flourishes under Jo Burgon. It is based on the University but is not confined to it. Much help has also been given by schools, including the newly formed and vigorous School Conservation Corps at Ely. The main Corps is now affiliated to the National Corps and this carries a number of important privileges.

Early in the year, Mr E. G. T. Bacon, of Little Shelford, found himself with a few months to spare before taking up a new post overseas and asked the Trust how he could make himself useful during this period. This resulted in personal visits to most of the sites and S.S.S.I.'s and a most useful compendium of up-to-the-minute site reports. There is no doubt that constant vigilance is very necessary. We are paying particular attention to roadside verges at present—changes here can easily be overlooked. We hope that members who have ideas about new reserves will let us know so that these can be discussed.

Technical Committee

Mr D. A. Wells reports as follows:

The committee have completed their appraisal of sites of natural history interest in the county. Two lists have been compiled, one consisting of roadside verges which have been notified to the County Surveyor; the other list contains those sites which have been assessed to contain the best examples of the various habitats within the county, such as woodlands, fen, open water and grasslands. It is hoped that this information will be included in any appraisal of the overall land use planned for the county.

The main task facing the committee in 1972 will be to make a fuller and more intensive survey of the species, both plants and animals, which occur in the county. This information is often wanted quickly in response to a request from the County Planning Department or other public body. It is important that the Trust Office be aware of *all* sites containing rare species,

both animal and plant, in order that these facts can be assessed before any change of land use is undertaken. Too great secrecy can be as fatal to species as collecting.

Education Committee

Mr M. H. Weale reports as follows:

The Education Committee has met on three occasions during the past twelve months under the chairmanship of Mr William Palmer.

A short list of sites of interest to schools engaged in field work was compiled by Mr Barber, and a more complete list is being compiled by Mrs While and Mr Hoad.

Mr Worthington, in a written report entitled 'Education and Conservation', questioned the continuing priority of the committee's work being directed at school education and suggested that land owners should be one of the main targets for our educational programme. One complete session was devoted to a discussion arising out of this and other suggestions contained in the report. As a result a small group, under the direction of Dr Walters, agreed to look further into the possibilities of securing co-operation from farmers and land owners in matters concerning conservation. A fourth edition of the teachers' guide to Fulbourn Educational Nature Reserve has been prepared by Mr Palmer, and the Chief Education Officer for the County, Mr G. D. Edwards, has written a foreword. This will be available to all schools in the county early in the new year, and copies will also be available for Trust members. The future of Fulbourn and its use by schools in the county is under review, and it is hoped that measures can be found to attract a greater use of this educational reserve by schools, particularly those in the city and the southern half of the county. Once again the evening lectures and film shows continue to play an important role, not only in encouraging new membership but also as a valuable part of the Trust's educational programme.

Isle of Ely Committee

Mrs H. While reports as follows:

Early in the year Mr Childs resigned as Chairman after 2½ years. His place has been taken by Mr Whitteridge, on the understanding that the position be reviewed each year so that it is possible for the post to circulate amongst different members. Four of our most active members—Messrs Alexander, While, Worthington and Dr Perring have had to resign from the committee on leaving the area. Mr Thorby, the Northern Area Planning Officer at March, has joined us.

Members of the committee have helped with the two Ouse Washes open days and also when the river excursion from Cambridge to Ely visited

Roswell Pits in August. Recruitment meetings have been reasonably successful, and, despite a foggy evening, there was a large attendance at the Wine and Cheese Party in December. This was held in the newly opened Maltings at Ely and, once more, Dr Max Walters addressed the gathering.

As regards our local reserves and sites, we are pleased that the Ely U.D.C. have approved the extension of the Roswell Pits Nature Trail and that the Wisbech R.D.C. have agreed to purchase the Roman Bank area and have asked the Trust to draw up a management plan. Mr Papworth has formed a management committee for the Manea and Bedlam Pits. At Bassenhally scrub has been cleared, and some new fencing and hedge-laying has been carried out. At Norwood Road there was trouble with vandals wrenching out Nature Trail posts and shooting birds early in the year. A youth was caught and fined, and since then there has been no further trouble.

We look forward to being hosts when the A.G.M. is held at Ely in April. At this meeting I shall be resigning as secretary after 3 years. I have thoroughly enjoyed my term of office, but I am moving to Huntingdonshire to settle down in my old home, set in its own Nature Reserve leased to the Beds. and Hunts. Trust.

Hayley Wood Management Committee

Dr O. Rackham reports as follows:

The 1970-71 coppice plot has made more growth in its first season than any of the previous plots: some of the new shoots are already over 6 ft. high. The 1971-72 coppicing is almost finished. A conflict of interests arises from the depredations of fallow deer among oxlips and young coppice: we have made a start on the difficult task of fencing off certain areas. Some 400 oak seedlings have been raised from Hayley Wood acorns to begin a new generation of standard trees.

The new Hayley Lane alongside the existing track has been grassed and provided with a new hawthorn hedge which in years to come will provide an interesting contrast with the ancient mixed hedge between the two lanes.

Dr R. C. Steele and Mr J. Kelcey have surveyed systematically the Triangle and the adjoining part of the old wood to determine how far plants from the latter have invaded the Triangle (and *vice versa*) in the 40-50 years since it became woodland.

We have studied in detail the possibly unique demonstration of plant survival and colonisation provided by the grassy verges of the old railway built in 1863. Part of the site had previously been a corner of Hayley Wood, the remainder being arable. On the ex-woodland verge, oxlips still grow in abundance and show (accurately to within a few yards) where the wood

used to extend. Bluebells, anemones, *Melampyrum cristatum*, and other woodland herbs also survive in the open after a century. Other plants, such as valerian and rest-harrow (*Ononis spinosa*), have colonised the ex-arable verge but have not invaded the former woodland. A third class of plants mark the former wood margins. The railway intersected Hayley Lane and (in two places) the line of an old track that used to run round the northern edge of the wood. Each of these three crossings has a colony of *Pimpinella major*, a plant which in Cambridgeshire has a curious restriction to the verges of old roads where they adjoin ancient woods.

We are much indebted to the coppicing teams organised by Mr J. Burgon, to Dr J. M. Way, Mr G. McBride, and to all who have helped in recording and in other ways.

Ouse Washes Management Committee

Dr F. Perring reports as follows:

By the continuous efforts of the Wildfowl Trust, the Royal Society for the Protection of Birds and ourselves, conservation organisations now control about half the land in the Washes between Mepal and Denver and it is increasingly possible to manage the Reserve area for birds and plants.

Last winter was excellent for wildfowl with 7,400 mallard in December, 4,700 teal in January, 35,650 wigeon in March, at least 1,650 pintail in March, 1,050 shoveler in February, 5,500 pochard in February and smaller numbers of gadwall, tufted duck, goldeneye, goosander, shelduck, greylag and white-fronted geese. Pride of place again goes to the Bewick's swans; the 1,278 in February is the largest number ever recorded. There were also nearly 400 mute swans and 28 whoopers.

In contrast the breeding season was very poor; numbers of duck were down on previous years and only tiny numbers of mallard, pintail and garganey were successfully fledged. Waders however were more successful than ever before. About 65 pairs of godwits nested, many on our own washes: 18 reeves reared their young and there was a 'hill' opposite our hide.

Our warden, Brian Ribbands, and the R.S.P.B. warden, Jeremy Sorenson, have put up stiles at Welches Dam which should make it possible for visitors to reach our hide there without walking on top of the bank. The Great Ouse River Authority and the Trust have agreed that the 5-bar gates giving access to the bank should be locked to prevent trespass by car. It is hoped that members will appreciate that uncontrolled access can damage the banks and disturb the birds. There have been members who insisted on picnicking within the Washes during the breeding season: all are reminded that they are only open in July, August and September.

In December a new hide was erected on the east side of the Washes to provide comfortable watching for members from the east of the county and a better view of the birds which congregate on that side when the Washes are completely flooded. This hide, together with the two erected by the R.S.P.B. for the public at Purls Bridge, which are also open to our members, should help the wardens considerably in controlling the visitor pressure which is steadily building up in the Washes as a whole.

Knapwell Wood Management Committee

Dr G. F. Peterken reports:

Dr Irwin Peck sold his Knapwell Estate, including Knapwell Wood, in the summer of 1971. This, of course, terminated the agreement by which the Trust manages the wood as a reserve, but the new owner, Mr John Jenkins of Childerley Hall, turns out to be very sympathetic towards the Trust's activities and broadly in agreement with the previous management policy. The management scheme will therefore continue on more or less the same lines as before. We greatly appreciate the opportunity, initiated by Dr Peck and now continued by Mr Jenkins, of managing this ancient oxlip wood as a nature reserve.

TREASURER'S REPORT

The detailed accounts for 1971, together with the auditors' report and treasurer's notes, are printed separately from this report.

During the year the Trust has purchased the freehold of Hall Yard Wood, Fordham (total cost £128) and a strip of land adjoining Hayley Lane (£206). Equitable rights over a further 32 acres in Coveney Common Wash were acquired for £1,649.

Progress towards the Ouse Washes Appeal target figure of £10,000 was slow in the first half of the year but, thanks to recent donations of £2,500 and £5,000 through the International and British Offices of the World Wildlife Fund, the Trust's immediate future in this important reserve is financially secure.

This objective having been achieved, the next task is to maintain the rate of growth in Trust membership, despite the increase in subscription rates agreed at the 1971 A.G.M. and now in force.

NATIONAL TRUST

EXTRACTS FROM THE REPORT OF THE WICKEN FEN LOCAL COMMITTEE

Report for 1970-71

No major developments comparable with the opening of the William Thorpe Building, reported last year, have occurred, and work has centred on consolidating the developments of previous years. The pace of development of the Charles Raven Marshland Reserve has been limited by the inability to reach agreement with the Swaffham Internal Drainage Board on the future of Commissioner's Drain. Plans have been approved for the planting of a mixed population of *Populus canescens* and *P. tremula* on part of Evans' Fen in the hope of encouraging the nesting of birds such as Herons. Work on the demonstration garden around the William Thorpe Building has proceeded with the construction of beds for herbaceous species and the planting of trees and shrubs.

Publications

The only new publication during the year has been a leaflet giving the teaching and research facilities now available at the Fen.

Visitors

The number of visitors increased considerably from 1969-70. Some figures are given below:

	1968-69	1969-70	1970-71
Total number of visitors	12,598	11,909	15,932
Number in parties	3,526	3,761	3,739
Number of parties	156	146	134

Parties ranged in size from 7-95

Zoological Report

Dr J. P. Dempster of the Nature Conservancy is studying the Swallowtail at Wicken in conjunction with his studies of the butterfly at Woodbastwick in Norfolk. Three transects, 50m. \times 1m., have been laid out in a recently burnt area of the Fen which will not be disturbed for some years. Ova supplied by Mr Short from his captive stock are being put out on *Peucedanum* plants and weekly observations of their progress are being made. *Peucedanum* and nectar-producing plants are less frequent at Wicken than at Woodbastwick.

Dr S. Barnett of the Cambridge University Veterinary School is studying the ticks of voles on the Fen.

Bird-Ringing Report

During the six months between 27 March and 4 October, 1970, 3231 birds of 47 species were ringed—the major scores being Reed Warbler: 415, Sedge Warbler: 408 and Tree Sparrow: 380. Interesting species of which smaller numbers were ringed include Woodcock (1), Cuckoo (2), Tawny Owl (1), Kingfisher (7), Jay (1), Nightingale (2), Redstart (4), Tree Pipit (1), and Red-backed Shrike (1). Members of the last three species were trapped during spring or autumn migratory periods and there was no evidence of local breeding. Most of the ringing was carried out around the margins of the reed-bed in the S.W. corner of the Fen, but on four weekends ringing parties operated simultaneously here and at the N.E. corner, near the brick-pits. This enabled an assessment of bird movements from one part of the Fen to another to be made. During 1970 four birds ringed on the Fen were reported from elsewhere (a Song Thrush reached Spain) while five ringed strangers were caught on the Fen.

Marsh Harrier, Whimbrel, Green Sandpiper, Greenshank and Long-eared Owl were all seen at one time or another during the summer.

Other projects included an analysis of the Redpoll population, the collection of data on Acrocephalus Warblers and observations on the moult progress of several species (particularly Tree Sparrow).

Warden's Report

Good progress was made with carr clearance. The area between Verrall's Drove and Drainers' Dyke has been considerably enlarged, work continuing during the winter. A new field is being established between Christy's Drove and Verrall's Drove.

We owe a considerable debt of gratitude to members of H.M.S. *Ganges*, Newmarket and Soham Secondary Schools and to the Police-cadets of Mid-Anglia Police Force for much laborious clearance on the Sedge Fen.

CAMBRIDGE NATURAL HISTORY SOCIETY

President: Dr J. E. Treherne

President for Lent Term 1971: Mr W. H. Palmer

Report for 1971

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

22 January	Prof. J. Heslop-Harrison	Pollen, Proteins and Hay-fever
12 February	Miss Dian Fossey	The Mountain Gorilla
5 March	Dr D. J. Gobbett	The Natural History of some Malayan Limestone Hills
22 October	Sir Eric Ashby, F.R.S.	Problems in the Abatement of Pollution
12 November	Sir Joseph Hutchinson, F.R.S.	Agricultural Productivity in India
26 November	Prof. W. A. H. Rushton, F.R.S.	Colour Vision

The Zoological, Entomological, Botanical, Geological and Cell Biology sections each held some six meetings during the season. A very successful *Conversazione* was held in the University Zoological Department on 12 March, with the Annual General Meeting on the same day. Members of the Trust are entitled to attend the Society's General Meetings, and it is satisfactory to report that there have been very good audiences at these lectures.

Subscriptions: Life Membership: £5, Annual: 50p., Members of Homerton and Hughes Hall annual: 25p, Undergraduates (3 years): £1.25 Corporate Membership (for schools etc.): £2.

Applications to: Mr I. Hepburn, 8 Millington Road, CB3 9HP

(City Secretary)

Mr G. C. Higby, Churchill College

(University Secretary)

FIELD MEETINGS AND OPEN DAYS IN 1971

Sunday, 14 February, Welches Dam Washes

There was a fine turn-out of at least 100 members to visit the Ouse Washes on a bright and not too cold afternoon. Although the visibility was good and the light excellent, the birds unfortunately stayed over on the Ely side and were difficult to identify except with a telescope. However, from the hide it was possible to observe large numbers of Wigeon, with a good

sprinkling of Mallard, Pintail and a few Shoveler. A Goldeneye and a single White-fronted Goose were reported, but not observed by most of the party.

The Bewick Swans, which are usually one of the main sights at this time of the year, were unfortunately installed lower down on the Washes. However, a halt at Purl's Bridge on the return journey enabled members to get a good view of at least a hundred of these beautiful birds on the R.S.P.B.'s Reserve which adjoins the Trust's property to the north-east. Much larger numbers had been reported from the Wildfowl Trust's Reserve lower down on the Welney Washes. The highest count of Bewick Swans on the Ouse Washes as a whole during the season was, in fact, about 1200—a record.

After this expedition, members were well able to appreciate why the Trust decided to erect another hide on the Ely side of their property.

Saturday, 29 May, Welches Dam Washes

This was the first time that a summer expedition to the Trust's largest reserve had been arranged, and it was encouraging that some 50 members attended. After the Secretary, Mr Robert Payne, had welcomed them and outlined the Trust's various interests in the reserve, the party proceeded in small groups to the hide, under the guidance of Mr Whitteridge, Mr Evans and Mr Papworth.

Members were able to see and hear one of the principal rarities of the Washes, the Black-tailed Godwit. But although the Ruffs and Reeves had once more bred successfully, they were not in evidence, being more secretive than the Godwits which were continually calling and often flew quite close to the party. There were plenty of Snipe drumming and, amongst other birds, numbers of Redshank and Reed-buntings were observed.

After the visit, the coach party and some others returned to Cambridge via Welney, where the Wildfowl Trust have their reserve. A brief stop enabled the new refuge to be observed in the distance, and the large herds of cattle grazing on the Washes. It is worth remembering that this summer activity is an essential feature in the management of all the reserves along the Ouse Washes if the birds are to have a satisfactory habitat in which to breed during the following summer.

Despite a somewhat showery afternoon, the visitors found the whole afternoon most interesting.

Saturday, 26 June, Devil's Dyke

A welcome improvement in the weather enabled some 30 members to spend a rewarding three hours exploring the rich flora of this ancient earthwork. The rendezvous was at the northern end of the Dyke, near the village green of Reach, and the party walked from here along the crest of the earthwork,

first through bushy stretches and later through open grassland. Much of the path had been recently cleared by work-parties of young people, and it was an easy matter to pass where only a year ago had been an impenetrable jungle.

Under the expert leadership of Mr John Clarke of Burwell members were able to observe a number of botanical rarities growing along this relic of pre-enclosure grassland. Amongst these were the Lizard Orchid (*Himantoglossum hircinum*), the Fragrant Orchid (*Gymnadenia conopsea*), the Bastard Toadflax (*Thesium humifusum*) and the Spotted Catsear (*Hypochaeris maculata*). The display of typical chalk grassland flowers such as Rock Rose, Horseshoe Vetch, Dropwort, Milkwort, Thyme and many others made this a walk of outstanding beauty. An additional interest was to see that present-day rarity, the Corn Cockle (*Agrostemma githago*), flowering in a carefully protected corner of one of Mr Clarke's fields.

For those interested in birds there were many Willow-warblers, White-throats, some Turtle-doves and a late Cuckoo still singing with an unchanged note.

The Trust now leases several stretches of the Dyke from the County Council. Members were able to inspect some of the conservation work carried out by the local management committee.

Saturday and Sunday, 3 and 4 July, Open Days at Thriplow Meadows

Fine and warm weather prevailed over the week-end, and the meadows were rich with flowers. The grasses were thicker and taller than usual as the local committee had not been able to arrange the usual grazing. The experimental strip management initiated in 1960 has now been discontinued, and from September 1971 a controlled policy of grazing (by cows) will be instituted. The local school children conducted an orchid count over that portion of the meadows used for these experiments in the past (see page 21) and recorded no less than 4,300 blooms. This is more than twice the number counted in 1970 and about 600 more than in 1969.

In addition to the splendid display of Marsh Orchids, visitors were able to observe the charming little Bog Pimpernel (*Anagallis tenella*) in good quantity, with its flowers fully open in the bright sunshine. It was noticeable that many small thorn bushes and willows had been cleared from the open ground by a work party of keen young conservationists.

There were over 150 visitors on the two days—Sunday, as usual, proving the more popular.

Sunday, 25 July, Wilbraham Fen

The last time an expedition was organised to visit this interesting fenland relic was in summer 1964. Since then the area of fen has diminished considerably, and the whole site has become markedly drier. It still retains,

however, much of interest as the party of over 30 members discovered. Despite a heavy shower at the outset, the weather remained fine throughout the afternoon and the large party thoroughly enjoyed the long walk. Dr Oliver Rackham proved, as usual, an admirable and knowledgeable guide, dealing with the history of the site as well as the individual plants.

The area exhibits two distinct types of vegetation—fen grass moor, wet for most of the year, but used for rough grazing, and the rather drier chalk grassland which carries a considerable growth of bushes (mostly hawthorns) on it. In the wet fen areas the tall Meadow Rue (*Thalictrum flavum*) was perhaps the most striking plant. But it was pleasant to see the little Brookweed (*Samolus valerandi*) growing in the wettest spots and the graceful Fen Bedstraw (*Galium uliginosum*) growing everywhere.

The chalk grassland showed many typical species, but none of the rarities to be seen on the Devil's Dyke. The Dwarf Thistle (*Cirsium acaulon*), which Dr Rackham has charmingly christened the 'Picnic Thistle', seemed particularly widespread. One or two plants of the Yellow-wort (*Blackstonia perfoliata*) were observed, and the Harebells and Milkworts were attractive. Amongst the bushes a few specimens of the Thorny Buckthorn (*Rhamnus catharticus*), a typical ingredient of fen scrub, were observed.

It was encouraging that so many of the party made use of the bus which had been arranged.

Saturday, 21 August, River Trip to Ely

Despite a grey day with poor visibility, this proved to be an entertaining excursion. Sixty odd members boarded the *Viscountess Bury*, moored by the Victoria Bridge, at 11 a.m. A three-hour voyage from here, including the negotiation of two locks, brought the party to the landing stage at Ely. On the way there, some desultory bird-watching and plant-spotting was carried out and picnic lunches were eaten.

Members of the Isle of Ely Committee were there to meet the boat and to conduct the party round the Trust's Nature Trail at the Roswell Pits. The visitors were divided into two groups—one primarily interested in birds and the other in plants. The former were able to observe, amongst other species, a party of Great Crested Grebes and various Moorhens and Coots on the water. A snipe was also seen flying over. There was plenty of variety for the botanists—water plants like Gipsywort, Purple Loosestrife and the Great Reedmace and many plants typical of disturbed waste ground, like Mugwort, Melilot and Coltsfoot. Particularly striking was a large colony of Marsh Horsetails. The return journey via Springhead Lane, with its tangle of climbing plants festooning the tall hedgerows, was particularly attractive, and obviously an excellent habitat for small birds. The whole circular route was pleasantly varied.

Having completed the trail, the party proceeded through the cathedral park to be entertained to tea by Mrs Martineau and the Bishop of Huntingdon. A magnificent feast was provided on the lawn of their charming garden overlooking the park, and all who were present were deeply grateful to them for their warm welcome and generous hospitality. Many people considered this the high-spot of the day! After tea, a return was made to the landing stage to board the boat for the long journey home.

Sunday, 12 September, Fulbourn Fen

The weather for the open day was superb, with the reserve looking at its best under a cloudless sky. Members of the Management Committee were there to welcome visitors and answer questions—it was a pity that only a moderate number of people turned up to enjoy a walk round the reserve.

On every visit to the Fen one is struck by the variety of habitats to be found there—woods, scrub, streams, wet grassland, and dry grassland. It is for this reason that it is such a good site for an educational reserve. Although so late in the season, a surprisingly large number of wild plants could be seen in flower, particularly the water plants. But perhaps the most interesting sight was the fine display of Yellow-wort (*Blackstonia perfoliata*) in the East Fen Meadow—a relatively infrequent plant in the county.

The bright sunshine had brought many insects out, and a number of different butterflies were observed. In addition, a grass-snake was seen at the drier end of East Meadow—an unusual record for this reserve.

As to birds, it was pleasant to see some Goldcrests and to hear the sound of the Nuthatch. A Jay was also seen and a large variety of common smaller birds, but there seemed an excess number of Wood-pigeons in the woods. Incidentally, it was reported by one of the locals that a flock of over 40 Golden Plovers had been sighted from the reserve the previous afternoon.

Saturday, 2 October, Fungus Foray at Holme Fen, Hunts.

As usual, the last excursion of the season proved very popular and some 50 members and friends arrived by coach and car to this interesting reserve. The Nature Conservancy had kindly given us permission to visit the site and we were grateful for the help and guidance of their staff during the afternoon. The expedition was under the skilled leadership of Dr Harry Hudson of the University Botany School.

The copious rains of the previous week, following a very long and dry spell, arrived just in time to ensure a good growth of fungi. Many different species were noted, and a happy afternoon was spent in admirable weather searching under the birch trees for new examples. There was an abundance of the edible Tawny Grisette (*Amanita fulva*) and the inedible *Lactarius torminosus* and *L. turpis*. The lemon-yellow *Russula ochroleuca* was promin-

ent as was the attractive Sulphur Tuft (*Hypholoma fasciculare*). The evil-looking black *Xylaria polymorpha* was to be seen on tree stumps and the large bracket fungus, *Polyporus militaris*, was too plentiful on the birch trees. Two other species of special interest were *Clitocybe odora*, with its distinct bluish-green cap and its strong smell of aniseed, and *Cordyceps militaris*, a species parasitic on insects, whose slender orange stipes rose from a dead caterpillar.

Dr Max Walters also explained the interesting ground vegetation of the site. The peat here is more acid than the alkaline peats of Cambridgeshire and supports such plants as heather, Sweet Gale (*Myrica gale*) and Sphagnum moss. A pleasant feature of the afternoon was the continual trilling of redpolls in the birches. Otherwise the sad autumn song of the robins was the only other sound.

A SURVEY OF CAMBRIDGESHIRE HEDGES

G. F. Peterken

The Trust has decided to carry out a survey of Cambridgeshire hedges, with the object of drawing up a list of the most important hedges from the conservation point of view. This article briefly explains the background to this survey.

With the rapid loss of 'unimproved' grassland and heath, the greatly increased efficiency of weed control in arable cultivation and the loss of so much deciduous woodland to the plough or conifer plantations, conservation organisations have been compelled to give serious attention to the marginal habitats, notably hedges and roadside verges, which had hitherto been taken for granted. This process has been given more impetus, first by the recognition that many road verges are old-established habitats by ancient trackways, or strips of old pasture and meadow separated from the adjacent land at the time of Enclosure; and second, by the recent research on the historical and botanical significance of hedges. Unfortunately, these Cinderella habitats are also suffering as the countryside is 'modernised'. Hedges are being removed at a rapid rate or have already gone, and verges are being disturbed by their use as farm tracks, by spoil from drainage improvement and road-edge improvement, and by the use of chemical sprays and mowing at the height of summer. The result of all these processes is a diminution in the richness of flowering plants in the countryside, and reduction of many species to a few relict locations.

Cambridgeshire and the Isle of Ely, in common with most of lowland

England, has suffered these changes, and now possesses large tracts of arable desert. Nevertheless, there are substantial grounds for optimism. The County has a fine record of conserving its most important sites at, for example, the Ouse Washes, Wicken Fen and Hayley Wood. Furthermore, the public authorities and many individual landowners have been willing to protect interesting sites of small extent when these have been brought to their attention by members of the Trust.

Members of the Trust have therefore been responsible, by the cumulative effect of their attention to detail, for preserving some of the diversity of the Cambridgeshire countryside. As part of this process, the list of roadside verges of natural history interest has recently been brought up to date and made available to the County Council. That done, the Trust has decided to undertake a similar exercise on the hedges.

Even now, despite hedgerow removal, it would be a formidable task to survey and record all hedges in the County; furthermore, a complete survey could be a waste of effort, for we surmise that many hedges have no special conservation value. Although hawthorn and elm hedges, mostly planted at the time of Enclosure, help to diversify the landscape and provide cover for wildlife, they are usually poor in shrub and ground flora species, and have little historical significance. Mixed hedges, on the other hand, may be of considerable conservation value, and it is these which we want to find, record and evaluate.

Mixed hedges are those which comprise many native shrub species in a mixture. They can be contrasted with thorn hedges, which normally consist of planted hawthorn, blackthorn and a few invasive species such as ash and possibly maple and privet, and elm hedges which often have little else beside the local strain of elm. Unlike the others, mixed hedges usually have more than five native shrub species in a 30 yard stretch, and may in exceptional circumstances have 10 to 12. Commonly they contain a good deal of hazel but many also have a number of other native species, such as field maple, dogwood, spindle, buckthorn, midland hawthorn, guelder rose, wayfaring tree and oak, as well as ash, rose, privet, blackthorn and common hawthorn.

Mixed hedges are interesting for reasons beyond their richness of native shrubs. They often harbour the remnants of a woodland flora: indeed some were originally woodland boundaries from which the woodland has since been cleared. Dr M. D. Hooper has already demonstrated in a previous article in this journal (1966), that these species-rich hedges are usually of great antiquity, and local historians are beginning to use a shrub-count as a method of hedge dating (e.g. a hedge with 10 species in a 30 yard stretch may be 1,000 years old). Mixed hedges tend to occur beside long established lanes, and on the old boundaries of parishes and manors, but not always so. Enough has been said to show that the conservation (and before that,

the finding) of mixed hedges is of interest to both natural historians and local archaeologists/historians, as well as the general country-lover.

The main object of the survey is therefore to find and record these mixed hedges, so that the essential factual background is available for conservation measures. A short list of the most important mixed hedges will be drawn up, based on their diversity of shrubs, ground flora or historical significance, and notified to the proper authorities. Details of how we propose to organise the survey and record the results will be sent to members, but basically members of the Trust will be asked to survey a limited area, such as a parish or part of one, and record any mixed hedges they find.

This may sound a large task, but in practice the number of mixed hedges may be no more than 200. During 1971, Dr E. Pollard has carried out a similar survey in Huntingdonshire, where some 70 mixed hedges were found, none of which occurred on fen peat. This pattern is likely to be repeated in Cambridgeshire, with a thin scattering of mixed hedges on the chalk, western clays and fen islands, none on the fen peat, and perhaps a relatively larger number on the south-eastern clay area.

Reference

Hoooper, M. D. (1966). 'Hedgerows in Cambridgeshire'. *Nature in Cambs.* 9: 23.

MANAGEMENT EXPERIMENT ON THRIFLOW MEADOWS, CAMBRIDGESHIRE

G. Crompton and I. Hepburn

Wet meadows, which were once used for rough grazing or mowing, have been fast disappearing from our countryside in recent years, mainly as a result of drainage schemes. Where they still occur, they often carry a rich and interesting flora and fauna. The meadows at Thriplow, 8 miles south of Cambridge (Grid reference: 52/437470), have long been famous for their spectacular display of marsh orchids (*Dactylorhiza praetermissa* and *D. incarnata*)—a splendid sight at the end of June. They support the largest surviving population of the former in East Anglia.

In order to preserve some of this interesting site, the Cambridgeshire and Isle of Ely Naturalists' Trust leased a small meadow within the orchid area from the owner, Lord Walston, in 1961. This meadow has an area of 5.2 acres—the other orchid meadows were only added to the reserve in 1968, making a total area of about 13 acres.

The Trust successfully applied to the Nature Conservancy in 1961 for a grant of £250 over five years to enable it to carry out a simple experiment to

determine the conditions of mowing or grazing best suited to the maintenance or extension of the orchid populations.

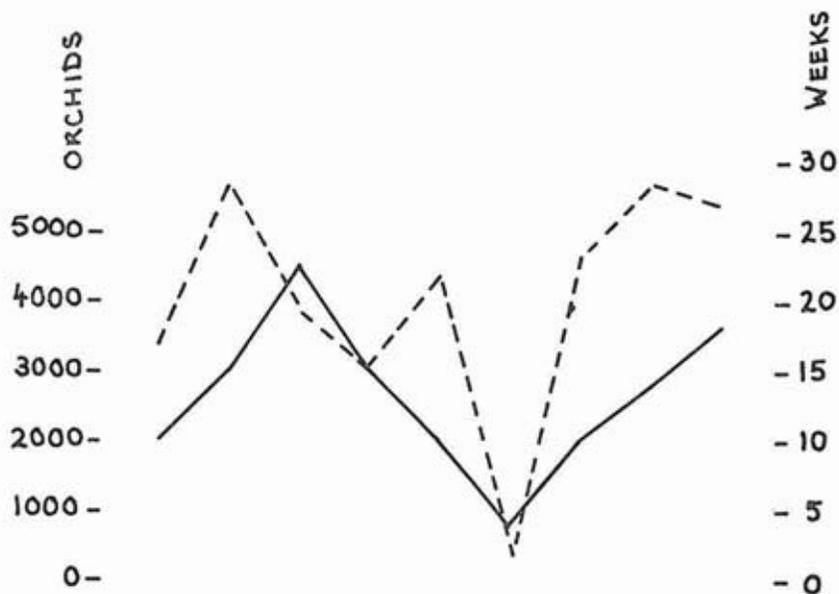
The meadow had been regularly grazed by cows up to about 1950, and after that cattle were grazed for about six weeks at the end of each year. The meadow had not been grazed at all for two years before the experiment started. It was decided to divide the meadow into four approximately equal areas for the purpose of the experiment. Strip 1 was to be grazed by horses, Strip 2 to be cut annually, Strip 3 was to be the untouched 'control' and Strip 4 was to be grazed by cows. The number of flowering orchid spikes were counted at the end of June during the five years that the full experiment lasted. This was carried out by parties of volunteers, and it was found that the best method to employ was to space the observers at even distances along a knotted rope. The whole party then advanced slowly counting all those flowers occurring between each knot, with frequent halts called by the recorder standing in the middle of the strip to enable him to note the individual scores, until the whole strip was covered. In this way overlapping was avoided, and it was easy for the observers to maintain a straight course. The following are the results of the counts for the five-year period:

<i>Strip</i>	1961	1962	1963	1964	1965	1966
I	1047	1516	2049	1222	905	308
II	486	409	658	500	440	88
III	693	—	498	309	194	45
IV	—	716	1231	908	651	266

The remarkable fall in the number of orchids counted in 1966, and to a lesser extent in 1965 was puzzling. It seems reasonable to suppose that the different types of management were in no way responsible, since the general pattern within each strip remained roughly constant over the years. Water-table readings had been recorded weekly since 1958 at a hole dug in Strip III (see figure). These usually conformed to a fairly regular pattern of high levels from December to April or May, falling off sharply at the beginning of June. There appears to be some correlation between these readings and the numbers of flowering orchids present, since the levels recorded in 1965 were the lowest since measurements started. Any certain relationship could hardly be established without possessing both water-table readings and orchid counts over a much longer period. There is also the possibility of physiological cycles occurring within the plants, but this again could only be detected by comparing counts over a much longer period. The annual counts and the water-table recordings have, in fact, been continued since the grazing experiment was concluded, and the following results have been

Dactylorhiza count ———

1961 62 63 64 65 66 67 68 69



59/60 60/61 61/62 62/63 63/64 64/65 65/66 66/67 67/68

Water-level - - - - -

Number of weeks when the water-level is within 5 cm. of ground level, between October and May.

obtained during the subsequent four years: (In 1971 about 4,300 flowers were counted by a different method)

<i>Strip</i>	1967	1968*	1969	1970
I	607	1174	1241	762
II	124	370	637	180
III	66	245	269	382
IV	1252	1108	1538	576

**Systematic recording of the water-level was discontinued in June 1968)*

Discussion of results

It is immediately obvious that the ungrazed control Strip III provided the least satisfactory conditions for the growth of the orchids. It can be assumed that this was due to the increased shading effect of the taller vegetation, particularly the sedge, *Carex acutiformis*, and competition with other strong-growing species. It is also clear that the grazed Strips I and IV consistently showed the largest numbers of flowering orchids, suggesting that light grazing of the type given has a beneficial effect on their development. Although Strip IV (cows) always showed lower numbers than Strip I (horses) during the years of the experiment, it is unlikely that this result is significant. It is probable that the results can be attributed to inherent small differences between the habitats—for instance there was a large area of dominant *Carex acutiformis* in Strip IV but relatively little in Strip I. It should be mentioned, however, that both cows and horses grazed on the sedge, and in any case it will be noticed that since the experiment was discontinued the number of flowering orchids on Strip IV has twice exceeded that on Strip I.

It remains to attempt an explanation of why Strip II, the cut portion, has never suited the orchids as well as the grazed strips. The practice throughout the experiment was to cut this area once each year at the beginning of August, well after the orchids had ceased flowering, and to rake the hay off a little later. It would seem that the strong growth of the general vegetation, particularly that of the sedge, in the earlier part of the year had an adverse effect on the development of the orchids. In Strips I and IV grazing, although never heavy, was spread over a much longer period and the general vegetation never had a chance of growing very high. There was also some evidence that the flower-spikes were avoided by grazing animals, presumably because they are unpalatable. The general conclusion seems to be that the best way to maintain the orchid population in a healthy state would be to arrange for a regular amount of light grazing through the year. Now that the Trust has acquired the adjoining orchid

meadows, a management committee has been set up to look after the whole reserve. It is likely that they will make use of the results of these experiments in deciding on the best treatment to employ.

A subsidiary experiment was started in 1963 on the effect of hand-cutting a small area of almost pure *Carex acutiformis* two or three times annually. An area measuring 30 × 10 yards was marked out in Strip III, and the number of different species colonising the bare ground between the sedge plants was noted annually. It was found that in 1964 ten different species had arrived, by 1965 colonisation by 20 different species had extended over the whole plot, and in 1966, when the experiment was concluded, the total number of colonising species was 26, with a remarkably large number of plants of *Lychnis flos-cuculi*. Once again this shows the desirability of restraining the coarser vegetation if the growth of less competitive plants is to be encouraged. This applies especially to such local specialities as the rare sedge, *Blysmus compressus*, the rush, *Juncus compressus*, and the Bog Pimpernel, *Anagallis tenella*.

An interim account of this experiment was published in the 1964 Handbook of the Society for the Promotion of Nature Reserves, and a shorter account in *Nature* in the Spring of 1965.

(References are given at the end of the next article).

HISTORY AND FLORA OF THRIFLOW MEADOWS

G. Crompton

Introduction

It had been assumed that the famous Orchid Meadows at Thriplow were a relict of ancient pasture land which had never been ploughed. As a result of the discovery of an aerial photograph taken shortly after the First World War—showing one of the meadows to be under cultivation—this has proved to have been an erroneous assumption. Since little was known of the past land use history of any of the three meadows within the Trust Reserve, the Enclosure Award Map was examined and some of the former owners and farmers of the meadows were consulted.

The meadows support a particularly rich and varied assemblage of plants. It is of some interest to determine how long these plants have been present there. An attempt has therefore been made to relate the history of each meadow to the distribution of the rare species within each meadow, together with some comments on the flora in general.

History of the Meadows

In the following account, 'land' or 'meadow' refers only to that which lies within the Trust Reserve.

Before Thriplow was Enclosed in 1846, a Draft Enclosure Map was made in 1840 (Fig. 1). This map shows that the old course of the stream running through the meadows was then to the west of the present line; this meant that most of the now badly drained part of Meadow C then lay on the east side of the stream. This stream also cut across the N.E. corner of Meadow B. All of the land to the east of the stream was Lammas Land, i.e. land that was private property until Lammas Day (August 1st), but thereafter subject to common rights of pasturage until the spring. All of the land to the west of the stream was within the Open Field Boundary, except for a small Close of about 1 acre at the south end of Meadow B. (Fig. 1). At Enclosure the land was drained by channelling the stream into a new, and fairly straight, Public Drain (Fig. 2). The boundaries of the allotments made out of the Open Field lie against the new drain, thereby cutting across the old course of the stream. It is assumed that all of Meadow C was now taken into cultivation and that at least all of Meadow B north of the Close continued to be cultivated. Meadow A is thought to have remained pasture ground because there was a large pond on it. (This pond is clearly shown on the 1st Ed. O.S. 25 inch Map).

It is also thought probable that the boundary between the two allotments in Meadow C was marked by a ditch, for the eastern end of such a ditch is still present there. Likewise, the ditch that divided the Close from the rest of Meadow B still runs straight across the meadow. These ditches are of importance for they may have acted as a reservoir for marsh plants during the period that these meadows were under cultivation.

Little further is known about Meadow A. The pond remained as open water well into the 20th C, and many villagers can remember skating on it. There is however, no recollection of cultivation near the pond. Since 1936 the meadow has been grazed mainly by horses. Meadow B had become pasture land by about 1880. It was grazed by the village baker's donkeys, pigs for a short period, and subsequently by cattle. (Fig. 3). Meadow C remained in cultivation until 1936. It was regularly drained with bush drains, i.e. trenches were dug, and into the bottom were laid sticks, then turves, and lastly straw, after which they were filled up again with earth. Varied crops such as wheat, oats and mangolds were grown successfully, but about 1 or 2 roods in the S.E. corner were too wet to be drained in this way; here hay for the horses was mown instead.

In 1936 this meadow was exchanged for another field as Thriplow Farms required more pasture ground for their Arab horses, and these horses, and occasionally some cows, grazed in this meadow until about 1964.

The Flora of the Meadows

The botanical literature was exhaustively examined for references to Thriplow during the preparation of a paper on 'The Peat Holes of Triplow'. (N. in C. 1959). There did not appear to be any records of fen and marsh plants, except for the Peat Hole area. We therefore have no indication of the composition of the flora in the meadows before systematic recording was started by the author in 1954. In view of the varied history of the meadows, the distribution of the marsh orchids, and of the rarer species present in each of the meadows, is described below.

MEADOW A

Marsh Orchids: Low lying areas, mainly towards the stream and around the Reed-bed. (Formerly the Pond).

Anagallis tenella: Confined to the S.E. corner (which was fenced off from grazing animals ca. 8 years ago); on mossy hummocks under *Juncus subnodulosus*. Not seen recently.

Carex elata: Under a small group of *Salix* and *Populus*. Also two large tussocks in the S.E. corner.

Potentilla erecta: Between the Reed-bed and the stream.

Scirpus setaceus: Seen in the 1950s near to *Potentilla erecta*.

Ophrys apifera: On a mound of earth beside a small ditch draining the Reed-bed into the stream. (cf. Fig. 3).

MEADOW B

Marsh Orchids: N.E. area and beside the ditch in the south. (cf. Map showing the distribution of orchids etc. in this meadow in 1961 in N. in C. [1962] p. 23).

Blysmus compressus: In a small area around the Telegraph pole in the centre. Between 1958-68 this area became invaded by *Carex acutiformis*, and the *Blysmus* is now confined to the vicinity of the water level recording pit, on ground that was regularly trodden. A few plants were also seen about five years ago in a trodden area near the eastern end of the fence between Strips 1 and 2. (cf. Map in N. in C. [1962] p. 23).

Carex nigra: In a shallow depression in the S.W. corner, in which *Eleocharis palustris* had been dominant.

Schoenoplectus tabernaemontani: In a wet hollow near to the hedge of *Salix purpurea* at the north end. (Not seen recently).

Ophrys apifera: Occasional in N.W. corner.

MEADOW C

Marsh Orchids: In the badly drained eastern half of the meadow. While this meadow was being grazed by horses, by far the densest population flowered here.

Key to Figures 1-6

All Figs.

a = arable
m = meadow
p = pasture
/// = buildings

Fig. 1 (Before 1840)

— — — — = furlongs
- - - - - = divisions between pastures
- - - - - = open field boundary
L A M = Lammas

Fig. 2 (1842-1846)

T = Gate
3rd = 3rd Public Drain
Henry Perkins = Allotment out of Lammas and Old Closes
(Joseph) Rayner = Allotment out of West Field and Lammas
Barringtons (Manor) = Allotment out of West Field and Lammas
Edw. Cock = Allotment out of West Field and Lammas

Fig. 3 (1884)

m = grass field
p = Old Pasture

Fig. 4 (1935)

B = Trust Reserve

Fig. 5 (1962)

" " " " = Marsh Orchids

Fig. 6 (1971)

A B C = Trust Reserve
" " " " = Marsh Orchids

Sources and References

(Fig. 1) Draft Enclosure Map, 1840. (CRO: 124/P78)

(Fig. 2) Plan of the Parish of Triplow, 1842. A. Watford, Surveyor, (Tithe Appt.). (CUL: Ely Diocesan Records) and Enclosure Award Map, 1846-7 (CRO: Q/RDc65)

(Fig. 3) OS. 1st Ed. 25 ins. Map, 1884, and The Triplow Place Estate, 1884. Sale Particulars. (CUL: Maps)

(Fig. 4) Aerial Photograph, Vertical, 1922. (R.C.H.M., Crawford Collection, TL 4345/2) cf. also: Jones, B. M. and Griffiths, J. C., (1925). 'Aerial Survey by Rapid Method'. CUP. Aerial Photograph, Oblique, 1952, 18 June. Dr St Joseph, Committee for Aerial Photography, University of Cambridge. (On this photograph can be seen many of the features on the Map of 1840, above).

Verbal accounts by members of the Perrin family, the former owners of Meadow C.

Crompton, G. (1959). The Peat Holes of Triplow. *Nature in Cambridgeshire*, 2.24-34. The Triplow Meadows Grazing Experiment has been reported in the following publications:

(a) *Nature in Cambridgeshire*. (1962) 5.20; (1963) 6.21; (1964) 7.13; (1965) 8.17; (1966) 9.21; (1967) 10.21. (G. Crompton).

(b) Crompton, G. and Walters, S. M., (1964) *Society for the Promotion of Nature. Reserves Handbook*, 23-26.

(c) Crompton, G. and Walters, S. M. (1965). *Nature*, 205.1058-9.

(d) Crompton, G. (1965). *Monks Wood Experimental Station Symposium No. 2*, 80-83.



Fig. 1 Before 1840



Fig. 2 1842-1846



Fig. 3 1884



Fig. 4 1935



Fig. 5 1962



Fig. 6 1971

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Scale 6" = 1 mile

Anagallis tenella: Confined to a small area between the old ditch and a mound of earth. Chiefly on mossy hummocks under *Juncus subnodulosus*.

Blysmus compressus: In and beside the old ditch, occurring as a dominant. Also in another ditch to the south. Rare near a cattle track towards the north.

Juncus compressus: Near to the first station for *Blysmus* above.

A complete list of plants recorded between 1954–68 will be found in the Appendix. Little attention has been paid to the distribution of the common species in the three meadows. Where it is known, the list indicates species exclusively to one meadow. It appears that there may be more species of the marsh element of the flora, which are exclusive to Meadow A, but this aspect requires further investigation.

Discussion

There remain many gaps in the historical record of each meadow since 1840. The Draft Enclosure Map may reflect conditions as they had persisted over many centuries. On the other hand, Thriplow Heath was first cultivated during the Napoleonic Wars, and likewise, the Open Field may have been extended up to the stream only at that time of severe food shortage.

Since we also have no information regarding the botanical history of the meadows, the following remarks are based on very incomplete evidence.

It appears that Meadow A is the sole surviving relict of a large area of pasture land, which had in the past been used by custom for grazing and mowing hay. It has continued to be used for grazing up to the present day. It is therefore considered to be the main reservoir of both the marsh, and the chalk grassland flora of this area.

In addition, ditches and small corners of Meadows B and C may have retained remnants of the marsh flora during periods when these two meadows were under cultivation. Likewise, chalk grassland plants may have survived along the edges of the fields.

Although most of Meadow B was cultivated, perhaps for many centuries, and Meadow A was cultivated for about 100 years, there was no use of chemical sprays, heavy machinery, or deep ploughing. These factors, together with a decline in the effective drainage of the area, may account for the rapid development and recolonisation of Meadows B and C, by a richly varied flora, particularly of marsh plants. But the chalk grassland species are today much more common in the drier parts of Meadow A, and there are more species of all kinds, exclusive to this meadow; this suggests that there could be a direct relationship between continuity of usage and composition of the vegetation. It remains a matter for conjecture whether Meadows B and C were colonised by seed dispersed by the wind or carried

by animals; or whether the vegetation has developed from seed and tubers left in the ground.

The continuing widespread destruction throughout lowland England of these old, damp grasslands, by draining and ploughing, increases the botanical importance of this site. Land is no longer allowed to revert back to grassland and, even if it were, the intensity of modern farming methods does not allow small relict areas, suitable for future recolonisation, to remain during the period of arable cultivation, as was the case in the past. Prior to 1940 many of the species present at Thriplow today, were common in the county. Today such species as *Blysmus compressus* and the number and quantity of *Dactylorhiza* spp. make these meadows unique in Cambridgeshire; they are considered to be one of the Trust's most important nature reserves.

FLORA OF THRIPLow MEADOWS

Acer campestre	B. pseudotriquetrum (A)
Achillea millefolium	B. rubens
Acrocladium cuspidatum	Calystegia sepium
Agrimonia eupatoria	Campanula glomerata
Agropyron caninum	C. rotundifolia
A. repens	Camptothecium sericeum
Agrostis stolonifera	C. protensum
A. tenuis	Capsella bursa-pastoris
Ajuga reptans	Cardamine pratensis
Alopecurus geniculatus	Carex acutiformis
A. pratense	C. distans
Amblystegium serpens	C. disticha
Anagallis tenella (A, C)	C. elata (A)
Angelica sylvestris	C. flacca
Anthoxanthemum odoratum	C. hirta
Anthriscus sylvestris	C. lepidocarpa
Apium nodiflorum	C. nigra (B)
Arctium lappa	C. otrubae
Arrhenatherum elatius	C. panicea
Artemisia vulgaris	C. riparia
Arum maculatum	C. spicata (B)
Ballota nigra	Centaurea nigra
Barbula convoluta	Centaurium erythraea
Bellis perennis	Cerastium holosteoides
Berula erecta (A)	Ceratodon purpureus
Blackstonia perfoliata (A)	Chaerophyllum temulentum
Blysmus compressus (B, C)	Cirsium acaulon
Brachypodium sylvaticum	C. arvense
Brachythecium rutabulum	C. palustre
Briza media	C. vulgare
Bromus racemosus	Conocephalum conicum
B. sterilis	Convolvulus arvensis
Bryonia dioica	Cornus sanguinea
Bryum caespiticium	Crataegus monogyna
B. capillare	Cratoneuron filicinum

Crepis capillaris
 Ctenidium molluscum
 Cynosurus cristatus
 Dactylis glomerata
 Dactylorhiza incarnata
 D. praetermissa
 Deschampsia cespitosa
 Dicranella varia
 Dicranoweisia cirrata
 Dipsacus fullonum
 Drepanocladus aduncus
 Eleocharis palustris
 Epilobium hirsutum
 E. montanum
 E. parviflorum
 Equisetum arvense
 E. fluviatile (A)
 E. palustre
 Euonymus europaeus
 Eupatorium cannabinum
 Eurhynchium speciosum
 E. swartzii
 Festuca arundinacea
 F. gigantea
 F. ovina
 F. pratensis
 F. pratensis × Lolium perenne
 F. rubra
 Filipenula ulmaria
 F. vulgaris (A)
 Fissidens cristatus
 F. taxifolius
 Fraxinus excelsior
 Funaria hygrometrica
 Galium aparine
 G. mollugo
 G. palustre
 G. uliginosum
 G. verum
 Geranium robertianum
 Geum urbanum
 Glechoma hederacea
 Glyceria declinata
 G. plicata
 Hedera helix
 Heracleum sphondylium
 Hieracium pilosella
 Holcus lanatus
 Hypericum tetrapterum
 Hypnum cupressiforme
 Iris pseudacorus (A)
 Juncus articulatus
 J. bufonius
 J. compressus (C)
 J. inflexus
 J. subnodulosus
 Kickxia elatine
 Knautia arvensis
 Koeleria cristata
 Lamium album
 Lathyrus pratensis
 Lemna minor (A)
 L. trisulca (A)
 Leontodon hispidus
 L. taraxacoides
 Ligustrum vulgare
 Linum catharticum
 Listera ovata
 Lithospermum officinale
 Lolium perenne
 Loniceria caprifolium (B)
 L. periclymenum
 Lotus corniculatus
 L. uliginosus
 Luzula campestris
 Lychnis flos-cuculi
 Lycopus europaeus
 Lysimachia nummularia
 L. vulgaris (A)
 Lythrum salicaria
 Malva sylvestris
 Medicago lupulina
 Mentha aquatica
 M. arvensis
 Mniium affine
 M. undulatum
 Molinia caerulea
 Odontites verna
 Ononis spinosa (A)
 Ophioglossum vulgatum (B)
 Ophrys apifera (A, B)
 Papaver rhoeas
 Pastinaca sativa
 Phalaris arundinacea
 Phascum cuspidatum
 Phleum bertolonii
 P. pratense
 Phragmites communis
 Physcomitrium pyriforme
 Pimpinella saxifraga
 Plantago lanceolata
 P. major
 P. media
 Poa annua
 P. pratensis
 P. trivialis
 Pohlia delicatula
 Polygala vulgaris
 Polygonum amphibium
 P. persicaria
 Populus canescens
 Potentilla anserina
 P. erecta (A)
 P. reptans
 Poterium sanguisorba
 Pottia davalliana
 Primula veris
 Prunella vulgaris

Prunus spinosa
 Pseudoscleropodium purum
 Pulicaria dysenterica
 Quercus robur
 Ranunculus acris
 R. bulbosus
 R. ficaria
 R. flammula
 R. repens
 R. sceleratus
 R. trichophyllus
 Rhamnus catharticus
 Rorippa microphylla
 Rosa arvensis
 R. canina
 Rubus ulmifolius
 Rumex acetosa
 R. conglomeratus
 R. crispus
 R. obtusifolius
 R. sanguineus
 Salix alba
 S. cinerea
 S. fragilis
 S. purpurea
 S. viminalis
 Sambucus nigra
 Samolus valerandi
 Scabiosa columbaria
 Scirpus tabernaemontani (B)
 Scrophularia aquatica
 Senecio aquaticus
 S. erucifolius
 S. jacobaea
 Silaum silaus
 Silene alba
 S. vulgaris
 Sisymbrium officinalis
 Solanum dulcamara

Sonchus arvensis
 S. asper
 S. oleraceus
 Stachys sylvatica
 Stellaria alsine
 Succisa pratensis
 Tamus communis
 Taraxacum officinale
 Torilis japonica
 Tortula laevipila
 T. muralis
 Trifolium fragiferum
 T. pratense
 T. repens
 Triglochin palustris
 Tripleurospermum maritimum
 Trisetum flavescens
 Tussilago farfara
 Ulmus carpiniifolia
 U. procera
 Urtica dioica
 Valeriana dioica
 Verbena officianalis
 Veronica beccabunga
 V. catenata (A)
 V. chamaedrys
 Viburnum lantana
 V. opulus
 Vicia cracca
 Viola hirta (A)

(1) Nomenclature according to: *A Flora of Cambridgeshire*. (1964). Perring, F. H., Sell, P. D. and Walters, S. M.

(2) I am indebted to Dr H. L. K. Whitehouse for determining the bryophytes.

OENANTHE SILAIFOLIA BIEB. AT THE OUSE WASHES, CAMBRIDGESHIRE

C. J. Cadbury

Of the water-dropworts (*Oenanthe*) this species has the most restricted distribution in Britain. Indeed, since 1930, it has only been recorded in 13 ten-kilometre squares, all of which are to the south of the Humber and east of the Severn estuary (Perring and Walters, 1962). *Oe.silaifolia* has probably always been a local species in Britain but judging by the fact that it had

previously been recorded in another 27 squares, it appears to have undergone a considerable contraction in its range. This is not surprising since it is largely a plant of the upper flood-plain levels in broad alluvial valleys. Improved drainage and flood prevention have led to the disappearance of many of the damp grassy meads favoured by this species.

In Cambridgeshire, *Oe.silifolia* has been recorded along the Cam in the Grantchester Meadows where it apparently became extinct before 1860 (Babington, 1860), and near Stretham (1833, *Herb. Cantab.*) Along the Great Ouse, the species has been recorded irregularly since the 1870s until 1946, both near Over and on the Hundred Foot Drain side of the Ouse Washes near Sutton Gault (Index of Cambridge flora, Botany School, Cambridge). A search may reveal the continued existence of the plant at these two stations since the habitat is apparently suitable. *Oe.silifolia* is still frequent in meadows bordering the Great Ouse at Houghton, a few miles over the county boundary in Huntingdonshire (Perring, Sell and Walters, 1964).

In June 1971, *Oe.silifolia* was again observed at the Ouse Washes, about 2 km. N.E. of Mepal (TL 4582). The plant was growing in small quantity in a wash about 150 m. from the Cradge Bank. The small washes in this area lie between the 105' and 106' contours, N.O.D., and are therefore usually inundated for less than a month a year and only when there are high floods. These meadows are among the few on the Ouse Washes which are mown for hay in June most years and then grazed by cattle later in the summer.

The floral composition of the wash on 11 June, shortly before it was mown, was as follows:

<i>Poa trivialis</i>	Abundant
<i>Alopecurus pratensis</i>	Abundant
<i>Ranunculus acris</i>	Frequent
<i>Rumex acetosa</i>	Frequent
<i>Phalaris arundinacea</i>	Frequent
<i>Filipendula ulmaria</i>	Locally frequent
<i>Festuca pratensis</i>	Locally frequent (near Cradge Bank)
<i>Deschampsia caespitosa</i>	Locally frequent (on dyke bank)
<i>Thalictrum flavum</i>	Occasional
<i>Oenanthe silifolia</i>	Rare, but conspicuous in flower

Ranunculus acris, *Festuca pratensis* and *Alopecurus pratensis* are species restricted to the highest and therefore least flooded parts of the Ouse Washes. The particular wash in which the *Oenanthe* was growing did not have such plants as *Rorippa* spp., *Eleocharis palustris*, *Glyceria fluitans* or *G. maxima* which are associated with the lower areas of the flood plain. Moreover, *Trifolium pratense** and the grasses, *Festuca rubra*, *Poa pratensis*,

Cynosurus cristatus, *Hordeum secalinum*, *Arrhenatherum elatius*, *Trisetum flavescens*, *Holcus lanatus* and *Lolium perenne** which grow near Mepal in hay meadows above the flood limit (107 foot contour) were absent.

At the Ouse Washes, *Oenanthe aquatica* is locally frequent in the Old Bedford River, in dykes and the lower zones of the washes, particularly in the vicinity of Welches Dam. *Oe. fluviatilis* has been recorded from the Old Bedford River and ditches near Sutton Gault. *Oe. fistulosa* appears to be scarce, but in 1971 was seen growing at the edge of a wildfowlers' flight pond near the Cambridge/Norfolk border (G. J. Thomas, pers. comm.). There is a record of *Oe. lachenalii* but this species is more frequent at Wicken Fen.

Confirmation of the existence of *Oe. silaifolia* at the Ouse Washes adds to the list of local Cambridgeshire plants found since 1968 in the course of the R.S.P.B.'s research programme at this wetland. The species include *Ranunculus lingua*, *Stellaria palustris*, *Myriophyllum verticillatum*, *Callitriche obtusangula*, *Polygonum mite*, *P. minus* (last observed 1968), *Rumex maritimus*, *R. palustris*, *Potamogeton berchtoldii*, *Typha angustifolia*, *Eleocharis uniglumis* which hybridises with *E. palustris*, and *Scirpus maritimus*.

(*Both *Trifolium pratense* and *Lolium perenne* were probably introduced as leys when several of these higher meadows were ploughed).

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THE FAIRY SHRIMP AT FOWLMERE

Martin G. Walters

The Fairy Shrimp, *Chirocephalus diaphanus* Prévost, is a fairly large crustacean which is found in temporary pools of fresh water mainly in the south of the country. It is rather rare, having been recorded only 67 times in England, mostly in the south east (Clegg, 1968). Thus when I discovered a population in a small pond at Fowlmere whilst searching for *Daphnia* I became very interested. The date was 6 October 1968 and I have found out since that this is the first record for a hundred years in Cambridgeshire. (The previous record was by L. Jenyns for Bottisham Park in 1868 and is given in the Victoria County History (1938)).

Chirocephalus belongs to the order Anostraca of the class Branchiopoda (Crustacea being regarded as a sub-phylum). Branchiopoda means 'gill-footed' and refers to the fact that the limbs are modified for use as respiration organs. It is the only member of the Anostraca still found in this country. The Brine Shrimp, *Artemia salina*, is rather similar but lives in salt water and is now extinct in Britain.

Since I found *Chirocephalus* at Fowlmere I have made as many visits as possible to the locality to record (in rough terms only) the amount of water present and the presence or absence of the Fairy Shrimp.

Chirocephalus was certainly the most numerous large animal in the pond when I first sampled it, but it was not the only one. I also collected small Water Boatmen (*Corixa* sp.), small nymphs of a Mayfly and a few water beetle larvae. On the second visit, which was on 8 March 1969, the associated animals were Copepods, Rotifers, Ostracods and small white worms. Plant life was represented by algae amongst which I identified *Spirogyra*. *Chirocephalus* was again plentiful and both large mature specimens and smaller sub-adult ones were present. This time the pond was fuller and was about twenty-five yards in diameter and a foot deep. During the visit I sampled four other small ponds in the same field but could find no sign either of nauplii or adult *Chirocephalus*, although there were plenty of Copepods. It seemed likely that the newer ponds would contain *Chirocephalus* since eggs could easily have been introduced either by wind or activity of other animals. Indeed there were Black-headed and Common Gulls, Lapwings and Snipe resting and feeding at the ponds and moving from one to another. These birds could easily have spread the eggs on their feet or beaks. It seems that these three subsidiary ponds were of irregular occurrence and were the result of a peculiarly wet period. I saw no other pools on the earlier visit and they certainly do not recur each year as does the main pool. It seems that the population cannot survive in temporary pools unless they are of regular occurrence. The Fowlmere pool was clearly temporary since the furrows of the field were readily visible beneath the water. The plant life also reflected this impermanence in that there were no true aquatics, but merely algae and a few species of damp ground, e.g. *Polygonum amphibium*. All records of *Chirocephalus* seem to be from temporary pools of fresh water and its appearance in these habitats is intermittent. Hall (1961) gives a considerable amount of information about the two ponds which he studied, but apart from this work there has been little systematic recording of its presence in a single habitat.

The eggs are extremely resistant to desiccation and it is this property which enables the species to survive periods of drought. This is fairly common amongst crustaceans and is presumably the reason why large numbers of copepods manage to appear in the pond as soon as water is present. It was even thought possible that the eggs had to be dried before hatching

could occur, but it was later proved that desiccation need not precede the development of the embryo or subsequent hatching. This I have confirmed from my own experiments, and it seems that as long as the water is shallow enough hatching occurs whether the eggs are dried first or not. Hall found that when eggs are kept at a depth of more than 20 cm. of water, little or no development occurs and hatching does not result. This seems consistent with my own observations. Soon after I first collected specimens from Fowlmere, I made a small pool in my garden, using a thin plastic to line it. I introduced many *Chirocephalus* and associated fauna and these lived for several weeks. There has been no second generation in this pool, which is about 25 cm. deep. However, fertile eggs were undoubtedly laid as I have removed several samples of mud from which nauplii hatched after it had been dried. Similarly I have never come across evidence of a second generation in the field. It must however be remembered that it is possible for an apparent new generation to occur in the same wet period as the first. This is usually explicable in terms of an alteration of the level of water in the habitat. It is significant that many such reports of new generations are made soon after heavy rain. In such a case a fall in level, followed by a slight re-filling, would produce a fresh crop of nauplii. Eggs under water at the pond's edge could be dried or subjected to very shallow conditions and as the level rises again these would hatch.

When mud containing the eggs of *Chirocephalus* is wetted the nauplii hatch fairly quickly. I have on two occasions seen nauplii four or five days after I have wetted mud in indoor tanks. If eggs are isolated immediately after being laid and are then subjected to extremely shallow water they complete development and hatch after about two weeks at a temperature of 15°C. From this it may be inferred that some development takes place after eggs are laid but before the pond refills with water. This is of considerable advantage to *Chirocephalus* because it means that repopulation of the newly formed pond occurs very rapidly. This in turn shortens the time taken for the animals to reach maturity and for more eggs to be laid—an advantage in a pool which may only exist for a few weeks.

In an experiment in which I grew batches of five newly hatched nauplii in similar jam jars, but in different conditions of light and temperature, I found that the full complement of segments was attained about fourteen days after hatching. At this stage it was possible to distinguish between the sexes. In the warmer conditions this development occurred faster. I have discovered since that the size of the container is important in determining the rate of growth of the young and that given more space this development would have been faster. Hall found that development from hatching to maturity averaged fourteen to sixteen days in a pond during June and July. Thus under ideal conditions a pond can become populated with adult *Chirocephalus* after sixteen days of flooding.

The eggs are produced in the ovaries which lie in the abdomen, one on either side of the alimentary canal. The oviducts lead to a median uterus which is inside the obvious egg pouch. The fertilised eggs accumulate in the egg pouch, which can now be seen from a considerable distance as it has become darkened by its contents. A female carries about a hundred eggs in its pouch, but I think this is variable. For one of my experiments I used about seventy eggs and it was fairly easy to get this number from a single egg sac.

I examined the eggs microscopically and they all seemed to be of the same type. Each was about 0.25 mm. in diameter, yellow in colour with a rough hard outer coat. The surface of the egg is divided up into numerous polygons by a network of ridges giving a 'honeycomb' appearance. The eggs are a little denser than water and accumulate at the bottom of the pond or aquarium. There is also a tendency for females to swim down to the bottom for the purpose of egg laying. They turn over dorsal side uppermost for a time and deposit the eggs on the substratum.

Judging by the results I obtained in the field, the life span of *Chirocephalus* would seem to be about three months. Thus young adults were present in early March 1969 but all had disappeared at some stage between early May and late June. The longest life I have recorded in a tank is of a female which lived for just over four months.

I do not know how many eggs a female lays in a lifetime but probably more than one pouchful. Thus, if maturity is reached at sixteen days, eggs are probably laid for about nine or ten weeks if favourable conditions continue. Pools often dry out before this and so the population is destroyed before the individuals have died of old age. However, if the water has persisted for about sixteen days it will generally remain for a little longer and eggs can usually be laid before it disappears. Even if drought occurs before maturity is reached there will probably still be a fair proportion of unhatched eggs remaining in the mud, some of which would hatch if the pond fills up again.

Hall worked on the development of eggs in relation to depth of water. He found that if newly laid eggs were left under different depths of water for the same period, and these were then transferred to watch-glasses of water, those which had been kept in shallow water hatched very quickly whilst those that had been in deeper water (20 cm.) hatched in the normal time. Thus development is halted by a depth of 20 cm. or more but goes on slowly in shallower conditions. The shallower the water, the quicker is the development.

As the pond with eggs in its mud begins to dry out, development starts when the water above them falls below about 20 cm. The extent of the development depends upon the length of time for which the water remains shallow. Complete development and hatching requires about fourteen days

of extremely shallow conditions (about 1 cm.) at 15°C. Such shallow water would evaporate to dryness in natural conditions in about a week. The dry eggs which remain after the water has gone will necessarily have begun development, though they will not all have reached the same stage. It is this mechanism which gives the eggs their property of remarkably speedy hatching in the next wet period.

The tough coat of the egg is presumably impervious to water and renders the embryo inside safe from death by desiccation. During the dry period it is possible that some larval development may also occur. Hall (1953) found that up to a point the longer the eggs were dried the quicker was development in water, but there is no very clear information on this question. It seems that if development does take place in the dry condition it is extremely slow.

Little is known of the viability of the eggs. Hall (1961) states that eggs kept dry in a watch glass for longer than six weeks failed to develop on return to water. However I removed a plateful of mud from the plastic lined garden pool in August 1969 and left this to dry, which it did in a few days. I wetted portions of this at intervals and nauplii appeared from one of these which I wetted on February 12 1970. This mud had been dry for about six months. The important factor governing the viability of the eggs may be the degree of desiccation. Hall's group of eggs were dried out in a watch glass whilst mine were associated with dry mud. It is possible that a covering of dry mud over an egg to some extent isolates it effectively from the drying air currents. It is probable that a small proportion of eggs remain viable for many months. These eggs would be of the greatest importance in ponds which disappeared for a long time. The Fowlmere pond was dry from July 1969 to February 1970. Repopulation occurred during March when it filled up, proving that eggs had survived for at least seven months.

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VASCULAR PLANT RECORDS

F. H. Perring

All records are for 1971 unless otherwise stated

This has been chiefly a year of tidying up; some of the most interesting records are based on herbarium material which has remained unidentified for some time, including one of my own for 1963. It has also been a year in which numerous local and several visiting botanists have made contributions. Both aspects make it an appropriate moment for me to hand over the county recording to Richard Pankhurst. I hope he will get off to a flying start with many more new than old records during 1972. The many active botanists in the county should send him their records as soon as the season is over at the Botany School, Downing Street, Cambridge.

May I take this opportunity of thanking all those who have contributed to these Plant Records during the last 15 years? The excitement of receiving your records, and the opportunity of meeting so many of you, has made it a happy and rewarding task. Finally, my special thanks to Peter Sell and Max Walters for their wide knowledge of plants, their tactful correction of my manuscripts and for sharing with me for so long the pleasures of the chase.

Equisetum telmateia Ehrh. Ditches, Eversden to Toft. 52/353548,

A. J. Worland. One of several records for a species previously thought to be extinct.

Dryopteris borreeri Newm. N. side of Trumpington church wall.

52/44-58-. July 1969. A. J. Worland, Previously only recorded from Chippenham.

Polystichum setiferum (Forsk.) Woynar. Old wall of Wilderness, St John's College, and north-facing base of wall, Trinity Hall Court, Cambridge.

52/44-58-. 1969. S. M. Walters. Third and fourth county records.

Polypodium vulgare L. subsp. *vulgare* Roof of church porch, Burrough Green. 52/63-55-. A. J. Worland. Apparently rarer than the next sub-species.

Polypodium vulgare L. subsp. *prionodes* Rothm. Cemetery wall, Gamlingay church. 52/24-52-. August 1969. Roof of Croydon church. 52/31-49-.

August 1969. Roof of Milton church, 52/48-62-. April 1969. A. J. Worland.

Lepidium rudemale L. Waste ground, Royston Sewage Farm. 52/355420. September 1970. G. M. S. Easy. Waste ground, New Road, Whittlesey.

52/280966. June. J. O. Mountford, Only recent records.

Lepidium latifolium L. Ballast, Whittlesey station. 52/280962. July 1970.

J. O. Mountford, det. P. D. Sell. First record for over 20 years.

Geranium x magnificentum Hyl. Cherry Hinton. 52/48-55-. October 1970.

S. M. Walters, det. P. F. Yeo. First county record for this garden escape.

- Rosa sherardii* Davies. Hedge of riverside meadow, Grantchester. 52/43-55-. September 1964. Mrs I. M. Vaughan. Second county record.
- Bunium bulbocastanum* L. Arable field margin, Litlington. 52/326405. July. R. J. Pankhurst. Second known locality.
- Rumex maritimus* L. Open pit by the loop line, Roswell Pits, Ely. 52/558809. July 1970. J. O. Mountford and G. M. B. Smith. Only the third record during last 20 years.
- Calamintha ascendens* Jord. Railway sidings to east of Whittlesey station. 52/280961. August 1970. J. O. Mountford. Roadside verge, Casterbush Hill, Great Chishill. 52/42-38-. (v.c. 19) Mrs V. Watson. Fifth and sixth recent records.
- Sambucus ebulus* L. Railway bank, Bartlow. 52/580451. July. E. Milne Redhead. The fourth known locality.
- Sonchus palustris* L. Banks of R. Nene, W. of March. 52/372952 and 52/390964. September. J. O. Mountford. Second recent county records.
- Hieracium sublepidoides* (Zahn) Druce. Rough chalk grassland, Bottisham Park. 52/54-61-. June 1963. F. H. Perring, det. P. D. Sell. Fourth record for this spreading species.
- Hieracium perpropinquum* (Zahn) Druce. Ballast at Whittlesey station. 52/390964. September. J. O. Mountford, det. P. D. Sell.
- Leucosium aestivum* L. Robinson Crusoe Island, Cambridge. 52/448576. May 1970. Mrs J. K. Hill. First record for this species naturalised in the county.
- Bromus inermis* Leyss. var: *hirtus* Drob. Roadside, Whittlesey. 52/275976. July. J. O. Mountford, det. A. Melderis. Casual. First County record.
- Apera spica-venti*. L. Beauv. In quantity, field entrance to Chippenham Fen. 52/653690. July. R. J. Pankhurst. Second recent record.
- Mibora minima* L. Desv. Garden bed, Plant Breeding Institute, Trumpington. 52/444544. April. R. A. B. Stallabrass, det. R. A. Finch. An unusual weed, previously recorded from the Cambridge Botanic Garden.

WEATHER NOTES FOR CAMBRIDGESHIRE 1971

J. W. Clarke

The weather in 1971 again followed the same broad pattern of recent years—a mild winter, cold spring, followed by a warm summer and autumn, with a marked tendency towards drought in early autumn.

The year began with a few days of frost and snow, but mild conditions set in on 7 January and continued without a break until early March. Mean maximum temperatures were 2°F above average during January and

February. The first week of March was cold and frosty, and the lowest minimum temperature of the year (22°F) was recorded during the night of 4th–5th. The mean temperature for March was slightly below average, but April became warmer and in May the mean maximum temperature was 4°F above normal. This was not maintained for long, and the June weather was mostly dull, wet and cooler than usual. July was the warmest month of the year, with a mean maximum temperature 3°F above average. The summer as a whole was not so warm as that of 1970, but it was decidedly warmer than those of the 1960s. The warm tendency was maintained in the autumn, and October proved a specially warm month. A short cold spell developed in mid-November, with a blizzard and snow lying on the 19th, but apart from this the month was particularly sunny with no fog. The weather became milder in December and remained so until the end of the year.

Although at Swaffham Prior the total rainfall for the year was very slightly above average, in West Cambridgeshire a deficit of 1.5 ins. below average was reported. The driest month was February (0.46 ins.) and the wettest was June (3.65 ins.) This is the usual rainfall pattern for the county—the maximum fall occurring in the summer and the minimum in the winter. The wettest months were January, June and August, rainfall being below normal in April, September and December. Four drought periods were recorded: 28 March–15 April, 30 August–23 September, 21 October–4 November, and 28 November–17 December.

Weather Records at Swaffham Prior 1971

Temperature °F

<i>Month</i>	<i>Mean max.</i>	<i>Mean min.</i>	<i>Highest</i>	<i>Lowest</i>	<i>Rainfall ins.</i>
January	43	37	53 on 23rd	24 on 3rd	2.64
February	45	35	52 on 3rd and 20th	28 on 16th	0.46
March	47	36	55 on 24th	22 on 5th	1.31
April	55	39	72 on 22nd	30 on 26th	0.90
May	66	44	76 on 11th	30 on 3rd	1.78
June	66	48	76 on 24th	42 on 29th	3.65
July	74	54	82 on 11th	41 on 18th	1.19
August	70	54	77 on 19th	45 on 17th	2.96
September	68	49	75 on 21st	41 on 12th	0.62
October	61	45	73 on 2nd	31 on 6th and 15th	2.82
November	48	36	61 on 3rd	23 on 11th and 20th	2.62
December	47	38	58 on 21st	25 on 29th	0.71
Annual mean	57.5	42.9			Total 21.66

Number of days over 80° F

4

Number of days over 70° F

83

Number of days with a maximum under 32° F

5

Number of days with a minimum under 32° F

50

Last air frost of the spring

3 May

First air frost of the autumn

6 October

ADDITIONAL LIST OF TRUST MEMBERS

(Joined between December 1970 and November 1971 inclusive)

- Abel, A. M., 7 Porson Road, Cambridge
Abel, M. J., 7 Porson Road, Cambridge
Abercrombie, M., East Lodge, Little Shelford,
Cambridge
Andrews, Mr and Mrs H. S., St Margaret's
Road, Girton, Cambridge
Archer, D. F., Tanglewood, Fordham,
Cambridge
Atkinson, M. P., 10 Pye Terrace, Church Street,
Chesterton, Cambridge
Augar, Miss S. A., 13 The Green, Thriplow,
Royston, Herts.
Auld, Mrs M., 14 Riverside, Cambridge
Bacon, Mrs F. T., Westfield, Little Shelford,
Cambridge
Bailey, R. L., 119 Oxford Road, Cambridge
Baker, Miss S. E., 5 Lees Way, Girton,
Cambridge
Ball, Miss Julia, 1A Searle Street, Cambridge
Barker, D., Pest Infestation Control, Ministry of
Agriculture & Fisheries, Brooklands
Avenue, Cambridge
Barling, R. W. A., Gonville & Caius College,
Cambridge
Barnard, Mr and Mrs A. E., 54 North Street,
March, Cambs.
Barrett, Miss J. M., 31 Lyndewode Road,
Cambridge
Beadle, Mrs M., 21 Station Road, Steeple
Morden, Royston, Herts.
Bell, Mrs R. W., 25 Hardwick Street,
Cambridge
Benfield, Mrs J., 18 Roman Hill, Barton,
Cambridge
Blackwell, C., 22 Edinburgh Road, Chesterton,
Cambridge
Bolgar, J. H., 52 Church Street, Gt Wilbraham,
Cambridge
Bourne, Dr and Mrs S. R., 120 Perse Way,
Cambridge
Bowd, M. G., 16 High Street, Manea, March,
Cambs.
Bowker, Mrs L., 57 King's Grove, Barton,
Cambridge
Brennan, Mrs A. L., 39 Willingham Road,
Over, Cambridge
Broadbent, Mr and Mrs K., 45 Ellingham
Avenue, March, Cambs.
Brownridge, A. J. M., 1 Ashwell Road,
Gulden Morden, Royston, Herts.
Burns, Mrs E. R., Mount Hall, Chelsfield
Village, Kent
Bye, J. F., 24 The Avenue, Sandy, Beds.
Bye, R. W., No. 8 Kingsway, Histon,
Cambridge
Carpenter, P., 289 Hills Road, Cambridge
Case, C., 28A Uffen Way, Sawston, Cambridge
Caxton District Ranger Guides, C/o Mrs L. N.
Nixon, 106 Cambridge Road, Barton,
Cambridge
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Bourn, Cambridge
Channell, Mr and Mrs J., 11 South Park Street,
Chatteris, Cambs.
Chapman, D. H., 291 Arbury Road,
Cambridge
Chapman, Miss J. E., The Cottage, 11 Brook
Street, Elsworth, Cambridge
Cleary, P. G., Pembroke College, Cambridge
Clemmow, G. H., 7 Cricketer's Close, March,
Cambs.
Cleverley, Mr and Mrs C. G., 23 Carnaby Road,
Broxbourne, Herts.
Cochrane, Mrs A., 30 North Brink, Wisbech,
Cambs.
Cole, Dr and Mrs S. M., The Old Rectory,
Little Gransden, Sandy, Beds.
Collett, K. C., Plashes, Boxworth, Cambridge
Count, Mrs R. R., Netherlands, 194 Mildenhall
Road, Fordham, Cambs.
Cowley, K., 8 Brackyn Road, Cambridge
Crouch, Miss W. A., Farley, Haslingfield Road,
Harlton, Cambridge
Cullen, P. M., 18 Church Street, Great Shelford,
Cambridge
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Abbotsley, Huntingdon
Dean, Mr and Mrs B., 42 Dry Drayton Road,
Madingley, Cambridge
Dean, Martin, 2 Luard Road, Cambridge
De Boom, Mrs J. M. T., 15 Brooklands
Avenue, Cambridge
Deeley, R., 128 Haven Bank Lane, Littleover,
Derbyshire
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Milton, Cambridge
Dickinson, Dr S., 9 Larchfield, Gough Way,
Cambridge
Duerden, T., Longridge, 18 Greenways, Holt,
Norfolk
Eckstein, Dr P. A., 114 Arbury Road,
Cambridge
Eddy, Miss D., 221 Hinton Way, Great
Shelford, Cambridge
Elliott, Mr and Mrs J., 45 Station Road,
Steeple Morden, Royston, Herts.
Elphick, Mr and Mrs E. G., 9 Harbour
Avenue, Comberton, Cambridge
Evitt, A. S., The Flat, Merton Grange,
Gamlingay, Sandy, Beds.
Fairbank, T. J., 10 Cranmer Road, Cambridge
Finnegan, H. A., 2 Rathmore Close, Cambridge
Fisher, A. C., 100 High Street, Melbourn,
Royston, Herts.
Flower, Dr C. D. R., 21 Courtyards, Little
Shelford, Cambridge
Forester, D., 11 Cheyne Street, Steeple
Morden, Royston, Herts.
Fulbourn Women's Guild,
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Fulbourn, Cambridge
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Cambridge
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Road, Tenterden, Kent
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Cambridge
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Melbourn, Royston, Herts.
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Cambridge
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Herts.
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Bar Hill, Cambridge

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- Hertz, Mrs M., 3 St Margaret's Road, Cambridge
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- Hibberd, Dr D. J., Culture Centre of Algae & Protozoa, 36 Storey's Way, Cambridge
- Holgate, Miss S. M., 65 Glisson Road, Cambridge
- Holmes, Miss G. B., 80 Fieldside, Ely, Cambs.
- Holmes, R., 80 Fieldside, Ely, Cambs.
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- Hubble, L. J., Church Road, Walsoken, Wisbech, Cambs.
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- Javons, R. A., St John's College, Cambridge
- Jennings, J. E., 5 Ash Grove, Melbourn, Royston, Herts.
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- Kirk, K. D. G., Coote's Farm, Steeple Bumpstead, Haverhill, Suffolk
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- Peake, Miss M., 56 Eltisbury Avenue, Cambridge
- Perring, Mrs Y. F. M., 27 Thornton Close, Girton, Cambridge
- Perutz, R., 42 Sedley Taylor Road, Cambridge
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- Phillips, Mr and Mrs J. D. F., 3 Cavalry Drive, March, Cambs.
- Phillips, J. H., 33 Almoners Avenue, Cambridge

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Reid, A., 16 Lynn Drive, Eaglesham, Glasgow

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Richardson, Mrs H., 11 Regent Terrace, Cambridge

Richmond, Miss D. L., C/o Mrs Wale, 75 Grange Road, Cambridge

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Robiette, A. G., 24 King's Grove, Barton, Cambridge

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Rule, Mrs W. H., 10 Soham Road, Fordham, Cambs.

Sawyer, W. W., Apt. 2529, 400 Walmer Road, Toronto 10, Ontario, Canada

Simpson, G. W., 35 Acacia Grove, March, Cambs.

Slott, Miss S., Neale Wade School, Wimblington Road, March, Cambs.

Smith, Mr and Mrs A. S., 5 Friars Close, Cambridge

Smith, D. R. T., 45 Lambs Lane, Cottenham, Cambridge

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Smith, Mr and Mrs J. G., 43 Greenfields, Earith, Huntingdon

Smith, Mrs M. E., Edgeways, 50 High Street, Milton, Cambridge

Smith, Miss R. A., 2 Saffron Close, Littleport, Ely, Cambs.

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Sussum, Mrs N. K., 2 Roseford Road, Cambridge

Sutton, J. P., 13 Church Lane, Cottenham, Cambridge

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Turner, C. H., 236 Green End Road, Cambridge

Turner, F. A., 6 Beech Grove, March, Cambs.

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Walters, R., 8 Courtney Way, Cambridge

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Weale, M. H., 32 Sutton Court, Sutton, Ely, Cambs.

Wells, T. C. E., 94 High Street, Upwood, Hunts

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Whitehouse, Mrs B. M., 39 Courtyards, Little Shelford, Cambridge

Widdowson, E. M., Orchard House, 9 Boot Lane, Barrington, Cambridge

Wilkinson, Rev. C. F. and Mrs, The Rectory, 6 High Street, Cottenham, Cambridge

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Wilkinson, Stephen, 9 Huntingdon Road, Cambridge

Willis, Miss C. M., 113 Chesterton Road, Cambridge

Wiltshire, H. R., 25 Malcolm Place, Cambridge

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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 or semi-natural state. County Naturalists' Trusts are now active in practically all parts of Great Britain. Our own Trust, which has played a valuable part in the growth of the voluntary conservation movement, has many urgent tasks to perform in Cambridgeshire and the Isle of Ely.

Aims of the Trust

1. To conserve the wildlife interest of Cambridgeshire and the Isle of Ely.
2. To set up Nature Reserves by acquisition or agreement in order to manage and protect their wildlife.
3. To promote in the public an interest in and understanding of conservation and natural history by publicity and education.
4. To co-operate with all local and national organisations concerned with the conservation of the countryside.

Privileges of Membership

Members are entitled to visit the 730 acres of Nature Reserves owned or managed by the Trust. They can also attend summer field excursions arranged by the Trust, and all receive a copy of *Nature in Cambridgeshire* and two newsletters each year.

Membership (as from 1 January 1972)

Minimum subscriptions: Ordinary £2 p.a., Life £50, Family Membership (husband, wife and any children under 12) £3, Corporate Membership Schools, etc. £2 p.a., Students 50p p.a. Full particulars from the Secretary, 1 Brookside, Cambridge, CB2 1JF.

LEGACIES

Some members may have considered the possibility of leaving money to the Trust in the form of a legacy. We are therefore including a suggested form of bequest, worded as a codicil to an existing will, which might prove useful. The testator should, of course, consult his or her legal adviser in making this alteration.

This is a codicil to the last Will of me.....(name)
of.....
..... (address)

I give a legacy of.....pounds (£.....) free of all duty to the Cambridgeshire and Isle of Ely Naturalists' Trust, and I declare that the receipt of the Treasurer or Secretary for the time being or proper Officer of the Society shall be a sufficient discharge to my Trustees for the said legacy.

In all other respects I confirm my said Will.

Signed, dated and witnessed.