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Cover photograph:
Sparrow hawk (*Accipiter nisus*) by Geoff Trinder

LINCOLNSHIRE NATURALISTS' UNION

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G Trinder

EPWORTH TURBARY : ITS MANAGEMENT AND WILDLIFE SINCE 1977

I do not intend to look into the history of Epworth Turbary in any detail, preferring to concentrate on the time since I was appointed manager of the reserve in 1977.

Having said that, by way of an introduction, there are one or two points which I feel ought to be mentioned. My first visit was during the late 1950's with a member of the union who had a great influence on my life during my teens and early twenties. I first met Joe Duddington on Manton Common in about 1954 when I was 'bird nesting' and he was collecting butterflies and moths. It was he who widened my horizons which at that time were limited to birds. Before long he had me out at all times of day and night, in places ranging from Laughton Forest, Scotten Common, to Manton Common and eventually Epworth Turbary.

Butterflies and moths involved the whole family and the house became littered with breeding cages, collecting boxes, and my pride and joy, a killing jar which my father had persuaded the local chemist to make up for me; with cyanide. I carried it everywhere in a bag on my back!

My first visit to the Turbary would have been about the time it became a nature reserve. The Lincolnshire and South Humberside Trust for Nature Conservation, then called The Lincolnshire Naturalists Trust, purchased it from the Public Trustees on the 8th May 1958. This first visit was at night armed with a white sheet and a Tilley Lamp and the first species I can remember recording with Joe was a Swallow Prominent (Pheosia tremula). Today it is still one of my favourite moths and it regularly turns up, to light, on the Turbary.

My second memory of the Turbary was several years later when I had started teaching. An Oak Eggar (Lasiocampa querous) larva in my possession had pupated and a female moth emerged on 2nd July 1963. I took this to the Turbary the following day and assembled several males, one of which is now in my collection. Again this species still occurs on the reserve and on one occasion in 1977 a male Whinchat (Saxicola rubetra) was feeding male moths to its young.

I became manager of Epworth Turbary when the late Frank Brazier retired from the post in the winter of 1976-77. It was he and Joe who decided that I should be approached to take on the job and recommended me to the Trust. Frank was a pioneer in Conservation Management and without his foresight as to how the Turbary should be managed I really wouldn't have known where to start.

Joe and Frank, both past Presidents of the Union, have had a big influence on my life, in pointing me in the right direction and instilling in me a love of the natural world, I would like to take this opportunity of thanking them.

Epworth Turbary is a relic of a raised bog, part of the great complex of fen and bog flat used to form the land around the Humber, it comprises 82.346 acres and is a Site of Special Scientific Interest (SSSI). It is owned by the

Lincolnshire and South Humberside Trust for Nature Conservation and is managed by them as a Nature Reserve.

The word Turbary is given to sites where certain rights were given to commoners. In the case of Epworth Turbary the parishioners of Epworth were allowed to remove one horse drawn cart of peat or turves per annum, for burning on domestic fires. Even if this right was still in existence it would no longer be a viable proposition as the layer of peat remaining on the site is so shallow, varying from about two inches to eighteen inches or two feet at the very deepest. Before 1920 the Turbary was devoid of trees and the wetter areas of the bog were considered dangerous. A lady who lived at Sandhill Farm, to the north of the Turbary, at this time told me it had 'orchids' and Sundew presumably (Drosera rotundifolia) in profusion.

With the improvements in drainage for agriculture the first scrub in the form of Birch (Betula verrucosa & B. pubescens) began to get established about 1920. By 1976 the whole reserve, apart from an area which had been cleared by Frank Brazier and a small band of volunteers (see fig. 1) was dominated by scrub and some fairly mature Birch. Other trees were becoming established, the main ones being Oak (Quercus robur), Aspen (Populus tremula), Common Sallow (Salix atrocinerea), Rowan (Sorbus aucuparia) and a small number of Alder (Alnus glutinosa). Along the southern edge of the reserve Alder Buckthorn (Frangula alnus) was fairly well established. On the banks of Skyers Drain, which runs between the road and the reserve and forms the southern boundary, Gorse (Ulex europaeus) was also well established. One Scots Pine (Pinus sylvestria) and one Holly (Ilex aquifolium), both rather small, were also discovered at this time.

The open area that had been created formed two distinct habitats, extending to about one and a half to two acres, the southern end was lower and therefore wetter and could be classified as a type of fen habitat whereas the northern end could be described as heath.

The southern end of this area had one or two good stands of Fen Sedge Cladium mariscus, some Cotton Grass Eriophorum angustifolium and Purple Moor Grass Molinia caerulea. The northern end was dominated by Molinia but there were also good areas of Ling Calluna vulgaris and in one or two of the lower areas Cross Leaved Heath Erica tetralix was to be found.

The management at this time was limited to extending the open area in a northerly direction, creating a pond and a members' route round the reserve. The open area was enlarged by removing birch by the roots using hedge knives.

In the Autumn of 1977, October 9th to be exact, a local farmer David Pantry visited the reserve with his tractor and digger attachment and created a small pond in the west of the open area. This was the site Frank Brazier had picked and the pond was named Pantry's Pond after David Pantry. At its maximum it was approximately six feet deep and at this point a little water began to seep in. The surface peat was only about six to eight inches at this point, below this was a layer of sand about two and a half feet deep then another layer of peat six inches thick. Sand lay beneath this and at about six feet the sand began to give way to clay. The pond slowly filled with water during the winter months but was not up to ground level until the following February.

Work on the members' route continued all that winter, many people in the area helping. Children were however the main labour force. I, along with five youngsters completed this work on 23rd March 1978 and the entry in the log reads

"What a bloody relief". During the early part of the winter attempts were made to explore parts of the reserve away from the open area. Three areas of heathland were found where Ling was still present. These areas run along the Northern side of the reserve and were cleared of all trees. Most trees were removed by their roots but the larger ones were painted with S.B.K. in diesel. They all regrew and had to be recut and sprayed the following year. The three areas were linked by paths or narrow rides to create a long edge effect and enable easy access from one to the other.

The other task that winter was to remove Birch from the area west of Pantry's Pond. This particular area having good stands of Cladium and Cotton Grass. The trees were removed by their roots and during the following twelve months the area bared was invaded by the existing Cladium and Cotton Grass. There were small areas of Sphagnum in this area and it was noted that this also started to colonize the bare areas of ground including the edge of Pantry's Pond.

The following winters of 1978-79 and 1979-80 were spent improving the members' route and enlarging the open area to the west of Pantry's Pond. Pantry's Pond was also extended to the east so that the open area was nearly bisected, to the north being heathland to the south fen. The digger was paid for by money raised by youngsters doing a sponsored bird watch.

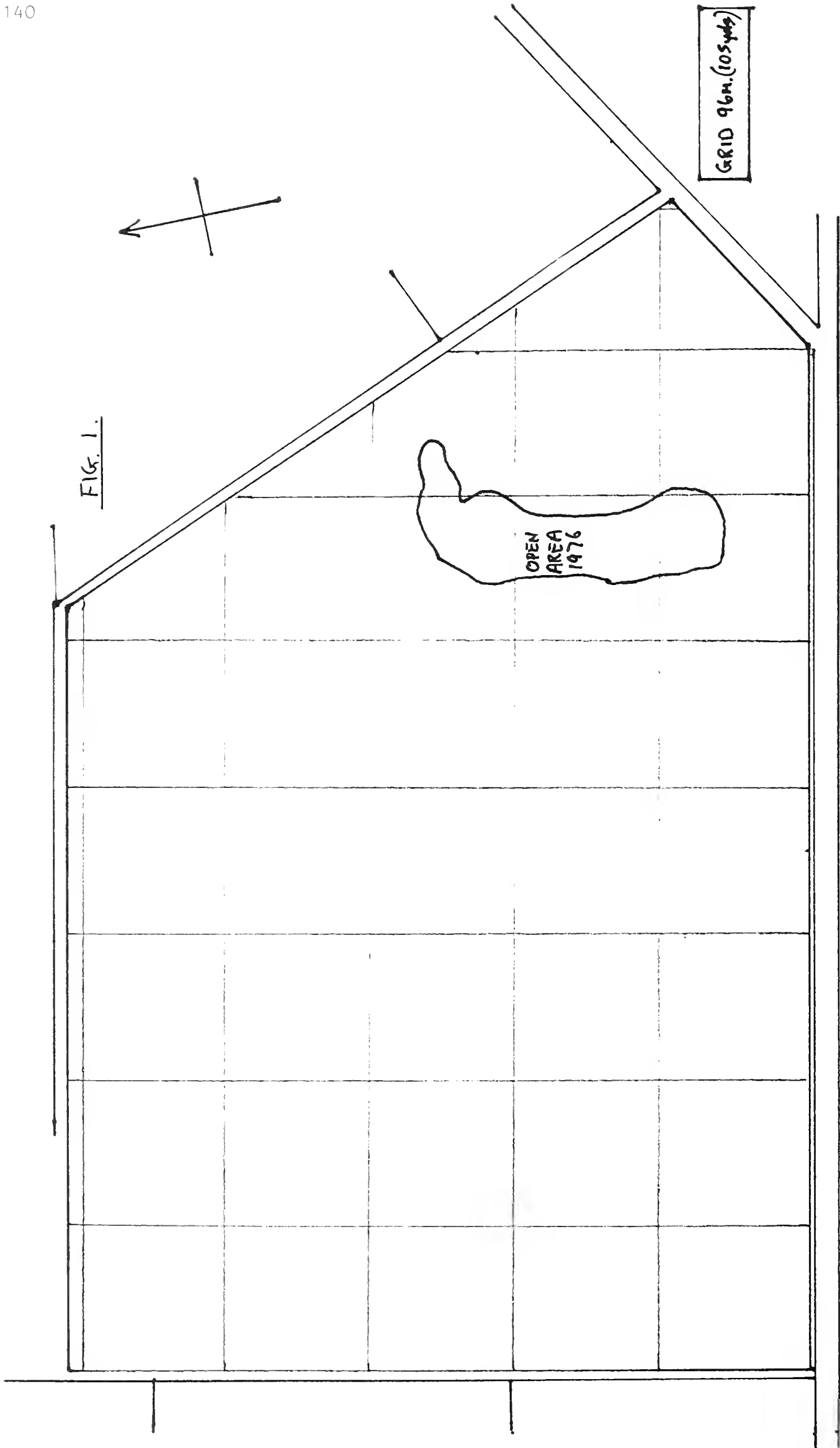
During this time it was once again noted that wherever the soil was bared the plant communities benefitted, particularly fen and heathland species of importance on the reserve. Other areas of the reserve were also explored and other stands of Cladium were found. There were dotted about the reserve patches of Common Reed Phragmites communis all covered by scrub of various ages. One such area to the north west of Pantry's Pond appeared to be particularly extensive, covering an area in excess of one acre and possibly as large as three or four acres.

A plan was formulated and forwarded to the Trust for approval. The basic idea was simple, fell the trees and create shallow ponds in the reedbed with the use of a digger. At the time I don't think I or the Trust were aware of what this 'simple' request would lead to, or just how big an area would be cleared.

The trust gave me the go ahead to start work and looking back I find this quite surprising because the only way I had been able to justify this work was by saying I had a 'gut feeling' that it would improve the habitats and enrich the wildlife on the reserve. My main consideration being that it would attract various species of birds.

While this was being decided a local farmer Colin Norman informed me that he had a digger which the Trust could use if they paid the drivers wages. This offer was accepted and Pantry's Pond was extended to the east so that the open area was bisected completely. A hide was installed overlooking the pond. Another pond was created in the south east corner of the open area and called Colin's pond and two ponds were created in the newly cleared reedbed, about half an acre of reedbed having been cleared by the Viking Conservation Corp.

To cut a long story short more reedbed was cleared and more ponds created, The technique was very simple. The trees were felled and stumps left at about two feet high. The brash was stacked into huge piles. The digger came along, heaved out the stumps, dropped them on the brash piles and dug a hole next to the pile. The spoil covered the brash and another pond had been created. All



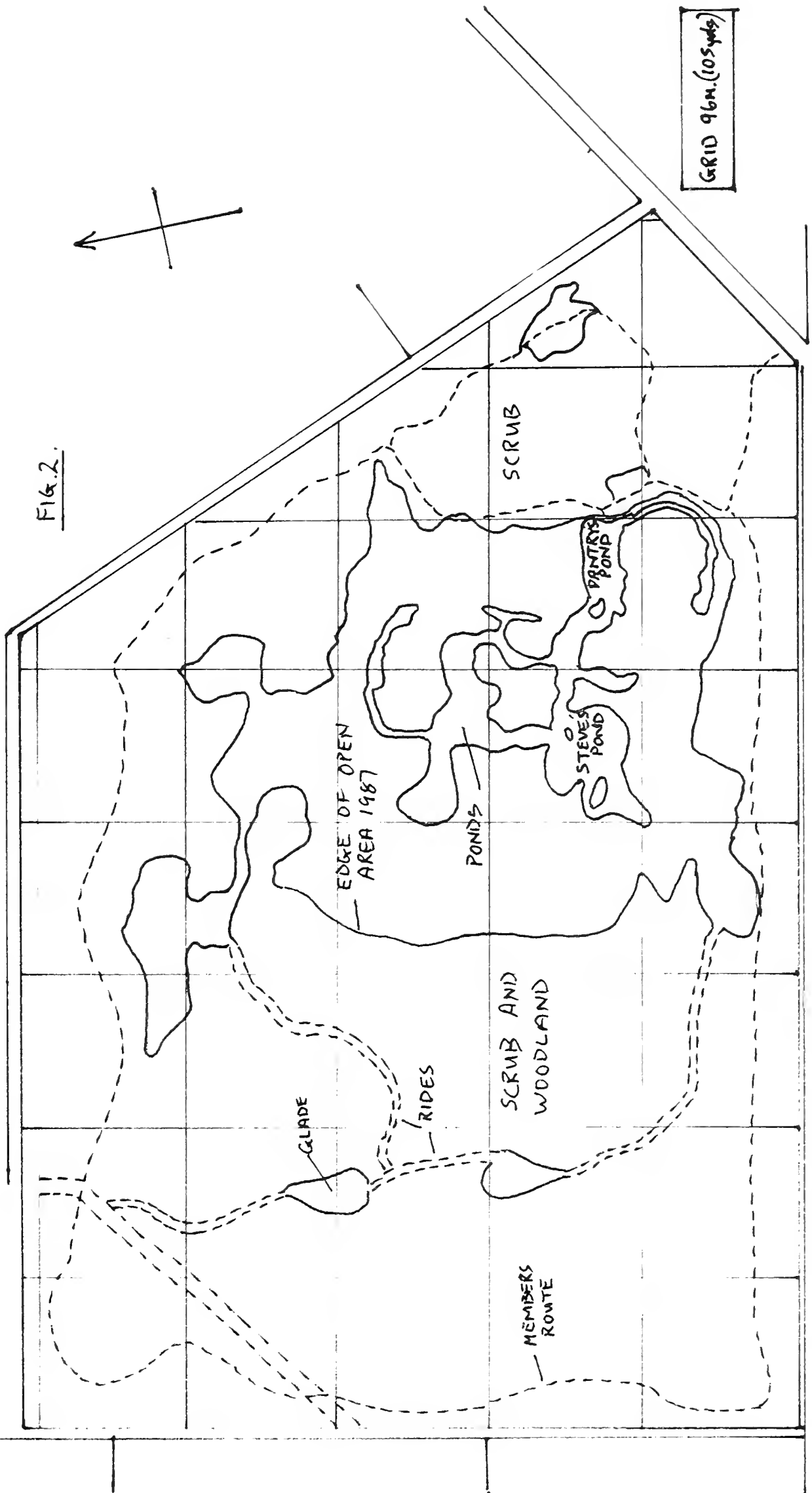


FIG. 2.

the ponds were linked by channels with the long term idea of being able to lift water from Skyers Drain to maintain water levels. The digger then left and I had time to reflect on what had been achieved.

The whole area looked a little like a potato field which had just had the potatoes removed and had then been used by the RAF for bombing practice, several craters littering the place. I had grave doubts about overdoing things and prayed nobody from Trust Headquarters would visit the site for about three years. Within four months the muddy holes were ponds and the potato field bore a remarkable resemblance to the reedbed.

At about this time two small areas of heathland were cleared of birch adjoining the members' route along the southern boundary of the reserve. This work was done by pupils from South Axholme School following a Local Studies course in school hours. Two or three trial plots of about thirty square yards had all vegetation removed by spades during the winter of 1979-80. By the following Autumn these were covered by hundreds of small Ling seedlings. The only problem with this being several spades were broken and to clear a small area properly could quite easily take a whole day. More extensive work of this kind was undertaken in 1984 and 1986 which I will come to later.

The whole of the western end of the reserve was totally dominated by Birch of varying ages with some Oak and Rowan, the predominant ground cover being Bramble Rubus fruticosus and two areas of Bracken Pteridium aquilinum. The two most essential pieces of equipment to explore this area were a machete and thorn proof leggings. A small path had been made through the wooded area running north/south across the reserve about two hundred yards from the western end of the reserve. This path had been cut by my wife and I in the winter of 1978-79. I knew where I wanted it to start and finish so it was marked with paint on the trees. This necessitated my wife standing at one end blowing a whistle and me starting at the other end with a pot of paint and making my way towards the sound of the whistle marking trees as I went. We eventually met and then the marked trees were removed.

During the winter of 1982/83 a Conservation Corps from Hull University and The Trusts own Viking Corp improved this small path by cutting a ride with two small clearings towards the centre of the reserve. Again the technique was simple, trees being felled, brash put into large piles and all timber of a reasonable size stacked to be converted to logs later. The stumps were left at about two and a half feet high and these were pulled out by a tractor with a chain attached to it. The next job during the winter of 1987/88 and 1989 will be to coppice the edges of the ride. This will allow more light to reach the woodland floor and get rid of the cliff like edges that flank the ride at the moment.

The main interest as a result of this work is that one of the clearings created has colonised with Ling. The rest of the ride is gradually being colonised by grasses (which species I am not sure) which are mown regularly during the summer creating a short turf which is another distinct habitat on the reserve.

In the autumn of 1984 some large areas to the north of Pantry's Pond had all the Purple Moore Grass removed by a digger which had been hired to create another pond in the by now extended reedbed area. It was hoped that this would encourage new beds of Ling. As I write this at the beginning of 1987 I am pleased to report that the cleared areas are now covered in healthy Ling plants

which became established in the twelve months after the work had been completed.

To save repetition I will at this stage just give a summary of the work done during the last two years. The main open area has been increased so that it now covers approximately twenty acres. Another ride has been cut which runs from the middle of the main ride to the open area on the north of the reserve. This open area has also been extended by about three quarters of an acre. Another area of heathland has been cleared at the south east of the reserve this being about an acre in extent. A loop from the members' route runs through this area. Most of this work has been done by an M.S.C. team who worked on the reserve for twelve months. During this time most of the brash was burnt rather than being left to rot.

Two large ponds have also been created during this period. The first is Steve's Pond which was created as a memorial to Steve Clark who was killed in 1981 aged 17. His parents Jim and Janis paid for this with money they received in compensation for his death. This is the largest pond on the reserve and is situated about a hundred yards in from the southern boundary. A hide has been erected overlooking the pond which gives excellent views across the open area and the second largest pond due north of Steve's Pond. When the water table is high the two ponds are linked. This was completed in August 1986 and was paid for with a gift from South Axholme Comprehensive School who won £1250 in the Nat. West Project Response Competition for the part played by pupils from the school in managing Epworth Turbary. They were one of six schools who were given National Awards for their projects. Both these ponds received 50% grant aid from the Nature Conservancy Council.

This winter youngsters from the school have made a start on coppicing trees flanking the members' route, a process which will take the next three winters. Fig. 2 shows the main open areas, rides and ponds on the reserve today.

The removal of trees was done to improve the habitat and increase species on the reserve, which I will refer to in a moment, a secondary and important by product has been a continuing source of income from the sale of logs for firewood. This has more than covered the cost of any expense incurred in performing management tasks. Before moving onto the wildlife of the reserve it is only right to thank certain people for their help over the last ten years. Eddie Exton, Bernard Featherstone, Paul Bower, Jim and Janis Clarke and Ken Green have all been involved in one way or another. Pupils from South Axholme School, too numerous to be named, have been responsible for more work than any other group. The Viking Corp, the group from Hull University and the local farmers who have loaned tractors, trailers and other machinery, David Pantry and Colin Norman in particular. A group of Young Offenders from the local Prison, the MSC team and last but by no means least my wife Chris who has carried logs and sprayed stumps as they have been cut to ground level in the spring, often carrying three gallons of spray on her back, but most of all for her patience, understanding and support.

One problem remains, that of seedling birch. No sooner is an area cleared than birch seedlings appear. To give an idea of the problem, a senior citizen in the Isle Group of the Trust was helping to remove birch seedlings one morning. After about forty five minutes I asked her how she was doing, to which she replied, "I stopped counting when I had pulled out twelve hundred." Each open area is hand weeded about every three years and I would imagine we must be getting near to a million seedlings having been removed. By seedlings I mean anything from six inches to three and a half feet high.

Looking to the future management of the reserve, the most important task is to maintain a high water table. Although this will not eradicate the problem of birch seedlings it should to a great extent lessen the problem. Nitrate levels from Skyers Drain have been monitored and according to Richard Lindsey NCC it should be possible to lift water from the drain to maintain a high water table on the reserve. The Trust are hoping to purchase a pump for this in the near future. I must admit I have reservations about the water quality and any lifting of water will have to be carefully monitored as to its effect on the various plant communities. The large number of trees removed is helping to slow down the drying out of the reserve by lessening considerably the amount of water lost by transpiration. Similarly the large bodies of open water on the reserve now seem to maintain their levels far better than when there were only one or two small ponds.

Having looked at the management of the reserve we now turn to the wildlife and the effect of the management on it.

Botany is not one of my strong points so I do not intend to deal with the plant communities in great detail. I have already mentioned the trees and shrubs on the reserve and several of the plants that have benefitted by management. Apart from the Ling, the Cotton Grass and to a lesser extent the Fen Sedge have managed to show the most marked improvement. Both now flower and have produced new plants. In the case of Fen Sedge it has been suggested that the new plants have appeared from underground 'runners' as the plant does not seem to produce well by seed. Ted Ellis, the well known Norfolk Naturalist, was particularly interested in the way the plants had colonised bare ground as this does not occur on many sites. I have noticed that it does particularly well on areas which are under several inches of water during the winter months.

I suppose of all the plants on the reserve the 'star' must be the Bog Rosemary Andromeda polifolia which is growing at its most southern point east of the Pennines. There are two small areas in which it grows. Each spring the leaves turn brown and drop off and I think we have lost it. I am always relieved when new leaves appear in late spring, early summer. Unfortunately it does not flower well, some years no flowers appearing at all.

Other plants which occur although not in any great numbers are Devilsbit Scabious Succisa pratensis, Meadow Rue Thalictrum flavum which grows just inside the main gate along with Meadowsweet Filipendula ulmaria. Purple Loosestrife Lythrum salicaria is confined to Skyers Drain, Yellow Loosestrife Lysimachia vulgaris is more abundant and many new plants have appeared in the newly cleared areas.

Lady's Smock Cardamine pratensis grows in the wet area which adjoins the road and the track to Sandhill Farm. This particular area has a most important population of water beetles which will be discussed later. Lady's Smock is the food plant of the Orange Tip Butterfly Anthocharis cardamines and the insect frequents this area and the roadside in good numbers at the right time of year.

As you would expect on a site such as Epworth, Tormentil Potentilla erecta is a plant that is common. Heath Bedstraw Galium saxatile in dryer areas and Marsh Pennywort Hydrocotyle vulgaris in damp places grow in isolated clumps in the main open area. Honeysuckle Lonicera periolymenum is fairly abundant particularly along the southern boundary. When walking round the reserve a few years ago with Miss Gibbons she discovered some Purple Small Reed Calamagrostis canescens which was I believe a new record at that time.

There are of course many other plants and one is creating a problem. Rosebay Willow-herb Chamaenerion augustifolium has colonised the banks of spoil from the creation of ponds, it already covers the bank of Skyers Drain. To stop seeding, it is proposed to cut the Rosebay each year, before flowering, with a scrub cutter. An attempt was also made in 1986 to pull up as much as possible by the roots and this will be continued in the future. It has only got established where the soil is loose e.g. banks etc it does not appear to colonise ground bared by the digger to encourage Ling.

Before moving on to mosses and liverworts just a brief mention of rushes. With the creation of ponds Soft Rush Junous effusus appears to have gained a foothold on the reserve. The plants have appeared on the spoil heaps and along the edges of one or two of the ponds. I was not aware of this particular species until after major management had been undertaken.

The bottom of the newly created ponds are also colonised by a rush which I believe is Jointed Rush Junous articulatus. This is totally submerged for most of the year but is clearly visible when the water table drops in the Summer and early Autumn. The most exciting colonisation however is by mosses.

When clearing the reedbed area of trees Richard Lindsey (NCC Scientific Team) visited the reserve with Sarah Priest (NCC Regional Officer). He was rather alarmed about the disturbance of clumps of sphagnum because according to him it did not like disturbance and we may lose it. I, in my usual manner leapt in with both feet telling him that he didn't know what he was talking about! I got a withering look from Sarah; nobody told me that he was an acknowledged expert on the subject! I explained that in fact Sphagnum was colonising bare ground in well under twelve months. He was rather surprised so I showed him an area that was bare sand twelve months previously, now covered in Sphagnum. I gather this rapid development is most unusual. I can report that initial signs of Sphagnum colonisation now appear in as little as eight weeks. In Pantry's Pond the Sphagnum is now two feet thick in places.

Why this should happen so successfully at Epworth I do not know; perhaps the secret is the baring of sand below the layer of peat. Whether the fluctuating water table also plays a part I am not sure. Sphagnum ouspidatum is the main species responsible for this colonisation. Three other Sphagnum species have been recorded. S. fimbriatum which is common in moist and dry places, S. auriculatum var. suriculatum found only occasionally and partly submerged and S. recurvum var. mucronatum also found partly submerged. I am grateful to Colin Wall who recorded these species and the following list of mosses and liverworts on 16th November 1986.

Polytrichum longisetum; occasional in cleared area.

P. juniperinum; frequent along rides.

P. formosum; detected along a ride.

Atrichum undulatum; edge of reserve, ditch bank by footpath.

Ceratodon purpureus; on peat.

Dicranella cerviculata (c.fr.) common in cleared area.

D. hetromalla (c.fr.) on peat bank, Birch scrub area.

Dicranum scoparium; on peat, cleared area.

Campylopus pyriformis; on peat, cleared area.

Fissidens bryoides; edge of reserve, ditch bank by footpath.

Barbula convoluta; clay bank near edge of reserve.

Funaria hygrometrica; clay bank near edge of reserve.

Orthodontium lineare; frequent on peat and epiphyte.

Pohlia nutans; on peat, common.

Bryum argentium; on public footpath.

Mnuim hornum; edge of reserve, ditch bank by footpath.

Aulacomnuim androgynum; epiphyte.

Drepanocladus fluitans; amongst Sphagna.

Brachythecium rutabulum; on ride.

Eurhynchium striatus; one patch near edge of reserve; rather unexpected, being a calcicole.

E. praelongum; common.

Plagiothecium denticulatum; edge of reserve, ditch bank by footpath.

P. curvifolium; epiphyte, by a ride (one patch).

Hypnum cupressiforme; epiphyte.

H. jutlandicum; along the rides.

Pleurozium schreberi; edge of rides.

HEPATICAE

Pellia epiphylla; edge of reserve, ditch bank by footpath.

Gymnocolea inflata; (c.per.) banks of ponds in cleared area.

Lophocoles heterophylla; common epiphyte.

Cephalozia bicuspidata; (c.per.) peat bank.

Calypogeia muellerana; peat bank.

Before leaving the plant kingdom a brief mention of Fungi. On 21st September 1986 H J Houghton visited the site and recorded the following species. As the weather was dry few Fungi were fruiting so the list is not in any way complete. I have included it simply because those with an R prefix are new records for SE70. Those with an S prefix are new site records.

<u>Agarics & boleti</u>	Amanita fulva
	Amanita muscaria
	Amanita rubescens
S	Boletus badius
R	Clitocybe nebularis
R	Collybia butyracea
R	Collybia maculata
R	Galerina mutabilis
R	Hebeloma crustuliniforme
	Hypholoma fasciculare
S	Laccaria amethystea
S	Laccaria laccata
	Lactarius quietus
	Lactarius turpis
R	Lactarius vietus
R	Panaeolus rickenii
	Paxillus involutus
R	Psathyrella candolleana
R	Russula claroflava
R	Russula cyanoxantha
	Russula ochroleuca
	Russula fragilis

<u>Aphylophorales</u>	Coriolus versicolor
R	Coriolus hirsutus
R	Daedaleopaia confragosa
	Fomes fomentarius
	Piptoporus betulinus
R	Pseudotrametes gibbosa

<u>Gasteromycetales</u>	R	Lycoperdon perlatum
	R	Phallus impudicus
<u>Ascomycetes</u>	R	Erysiphe heraclei on Heracleum sp.
		Rhytisma acerinum (conidial) on Sycamore leaves
		Xyaria hypoxylon
<u>Uredinales</u>	S	Phragmidium violaceum on Rubus fruticosus agg.

We can now move on to the animal kingdom with which I am a little more confident. Epworth is very important for its invertebrates and has been designated a grade B site on the NCC Invertebrate Site Register. There is only one grade A site in South Humberside, Crowle Waste.

The management work, in particular the creation of ponds, has benefitted one order of insects more than any other on the reserve. I refer to the Odonata. Eleven species have been recorded ovipositing during the last six years. Of these by far the most numerous is the Black Darter Sympetrum scotium. Although not common in much of the county, the Four-spotted Chaser Libellula quadrimaculata is also present in reasonable numbers. I would even call it common within the Isle of Axholme, it has appeared in my garden on more than one occasion.

Of the damselflies The Azure Coenagrion puella is the most plentiful and I live in hope of recording the Variable Damselfly Coenagrion pulchellum in the future. The last species to arrive on the reserve was the Large Red Damselfly Pyrrosoma nymphula. As this is so common in the area I was surprised it took so long to get established. The remaining seven species recorded are listed below:-

The Southern Hawker	<u>Aeshna cyanea</u>
The Common Hawker	<u>Aeshna juncea</u>
The Brown Hawker	<u>Aeshna grandis</u>
The Common Darter	<u>Sympetrum striolatum</u>
The Emerald Damselfly	<u>Lestes sponsa</u>
The Blue-tailed Damselfly	<u>Ischura elegans</u>
The Common Damselfly	<u>Enallagma cyathigerum</u>

The area where the Lady's Smock grows becomes a shallow pond during the winter and retains water until early summer. This area is of great importance for water beetles, a fact discovered by David Bilton from Cumbria when he visited the site on 23rd March 1984. I quote from his letter:- "Of the beetles I found at Epworth, five are either rare or very local, being associated with areas of ancient fen. Of these Hydroporus rufifrons is the rarest, this being almost unknown in the country outside Lakeland and the SW of Scotland. Hydroporus neglectus, Hygrotus decoratus, Agabus labiatus and A. uliginosus are the other interesting species. All are rare or unknown elsewhere in the area.

This all seems rather strange when the area is dry for much of the year. I have been told that a beet washing shed stood on this corner of the reserve in the 1920's which makes it even more remarkable. The only beetle found in the new ponds was the whirligig Gyrinus substriatus but in time I hope that these ponds will be colonised by the rarer species. A full list of beetles recorded by David Bilton, 35 species, is shown below:-

<u>Hygrotus decoratus</u>	<u>H. striola</u>	<u>H. brevipalpis</u>
<u>H. inaequalis</u>	<u>H. tessellatus</u>	<u>H. flavipes</u>
<u>Coelambus impressopunctatus</u>	<u>H. umbrosus</u>	<u>H. grandis</u>
<u>Hydroporus angustatus</u>	<u>Agabus bipustulatus</u>	<u>H. minutus</u>
<u>H. erythrocephalus</u>	<u>A. congener</u>	<u>H. obscurus</u>
<u>H. gyllenhali</u>	<u>A. labiatus</u>	<u>Hydrobicus fuscipes</u>
<u>H. incognitus</u>	<u>A. melanocornis</u>	<u>Anacaena bipustulata</u>
<u>H. memnonius</u>	<u>A. sturmi</u>	<u>A. globulus</u>
<u>H. neglectus</u>	<u>A. uliginosus</u>	<u>A. limbata</u>
<u>H. obscurus</u>	<u>A. unguicularis</u>	<u>Cercyon tristis</u>
<u>H. palustris</u>	<u>Gyrinus substriatus</u>	<u>C. ustulatus</u>
<u>H. rufifrons</u>	<u>Helophorus aequalis</u>	

The reserve had lost its most important butterfly before I became manager. The Large Heath Coenonympha tullia used to occur at its most southern point east of the Pennines. The last record was in 1970, its disappearance must have been caused by birth scrub totally dominating the reserve. This species does still occur on the Trust reserve of Crowle Waste where it is still fairly abundant. With the newly created open areas at Epworth and the increase in common grass the habitat is now once more suitable for the Large Heath. With this being the case there is the possibility of attempting a reintroduction at Epworth.

One of the most common species of butterfly on the reserve is the Gatekeeper Pyronia tithonus. Other members of the Satyridae that occur are the Wall Lasiommata megera, small numbers. The Meadow Brown Maniola jurtina and the Ringlet Aphantopus hyperantus are fairly common but not as abundant as the Gatekeeper. All these species are best observed along the roadside and in the area of the car park. One other member of the family, the Small Heath Coenonympha pamphilus, also occurs but only in small numbers.

The Hesperiidae are represented by two species, the Large Skipper Ochlodes venata, which is abundant in some years. The creation of the open area seems to have been of particular benefit to this species. The Small Skipper Thymelicus sylvestris occurs but in less numbers than the previous species.

I have already referred to one of the Pieridae, the Orange Tip. The most important member of this family that occurs, almost at its northern limit is the Brimstone Gonepteryx rhamni. It can never be seen in huge numbers on the reserve, in fact the presence of ova and larva on the Alder Buckthorn are the only sign of it on occasions. In 1984 the larva from one Alder Buckthorn (40) were collected and reared at home. The adult insects were then released back on the reserve. Since then the adult insects do appear to have been seen more regularly. The Large White Pieris lraassicae, the Small White Pieris rapae and the Green-veined White Pieris napi also occur, the last species being the most common.

The Small Copper Lycaena phlaeas and the Common Blue Polyommatus icarus have also been recorded, the latter species only occasionally. The Small Copper is recorded most years but only in small numbers.

Four members of the Nymphalidae are the only other species that have been recorded during my time as manager. Of these the Red Admiral Vanessa atalanta has been recorded in small numbers during the last three years. There has only been one record of the Painted Lady Vanessa cardui. The Peacock Inachisio and the Small Tortoiseshell Aglais urticae occur in good numbers some years, 1986 however was disastrous for both species.

I have dealt with the butterflies in some detail because they are not represented by many species. The moths on the other hand would require a paper of some length to cover them so I only propose to refer to selected species. How many species occur can only be guessed at but the total must run into several hundred. On 29th July 1978 a moth count was undertaken by Joe Duddington with Sam Van den Bos, myself and one or two other members of the Trust. I mention this particular evening because in Joe's words it was the best moth night he had experienced, just over 80 species being recorded.

Several hawk moth species occur of which the most notable is the Lime Hawk Mimas tiliae. A newly emerged insect was recorded two years ago drying its wings on the trunk of a birch tree, birch not being the usual foodplant. The Poplar Laothoe populi, the Eyed Semerinthus ocellata and the Elephant Hawk Deilephila elpenor all turn up regularly to light.

I have already mentioned one member of the Prominents Notodontidae, the Swallow Prominent, this being one of ten members of the family that have been recorded.

There are also several members of the Tussock moths Lymantriidae that occur, of these the most notable is the Scarce Vapourer Orgyia recens which is a rare species within the county. One of the most colourful larva of all the moths is the Pale Tussock Dasychira pudibunda and most years the larva if not the moth is recorded.

I have already mentioned the Oak Eggar but two other members of the family deserve mention. The first of these is the Fox Moth Macrothylacia rubi, because of a strange habit of the male moths. The males fly during the day and can be observed most years. On at least four occasions I have recorded this species dipping into the water of one or other of the ponds as they fly over them. This has made an audible as well as visible splash. The moth has then gained height and continued in the same direction. On one occasion, having done this, the moth flew over the heathland only to return and dive into the water before returning to its original course, whereupon it returned and entered the water for the third time. This was very strange behaviour, which I do not really comprehend and I have not heard of anyone else recording this. The other member of the family worth a mention is the Lappet Gastropacha quercifolia which has turned up to light on three or four occasions.

Although not recorded every year, there is a small colony of Wood Tiger Parasemia plantaginis. The moth can be seen during the day when the males fly in full sunlight. They are most often observed in the vicinity of Pantry's Pond.

The most interesting record is of the Ni Moth Plusia ni which is a rare migrant that has never been recorded regularly in the British Isles. It is similar to the Silver Y Plusia gamma in appearance but the Y-mark is different in that it is more like the letter U.

In the autumn the Pink-barred Sallow Citria lutea is one of the most attractive moths recorded. The Red Underwing Catocala nupta on the other hand is the most spectacular. Many other species occur during all months of the year but I do not intend to mention any other species in this account.

There are other orders of insects which I feel sure are of interest but they have either not been recorded or I am not aware of the records during the period in question. If any expert would be willing to undertake surveys of any

order not yet covered I would be very grateful. A start has been made on a survey of Spiders on the reserve but this is only in its early stages. It appears that there may be some interesting species but I do not intend to cover them here.

The Turbary is not well represented by Reptiles and Amphibians, there being only three species recorded during the period I have been manager. Of those the Common Lizard Lacerta vivipara is the most numerous but is not often seen. There have been only three records of Grass Snake Natrix natrix, all in the last four years and one of these records was a discarded skin.

The only amphibian records are of Common Toad Bufo bufo. Again all records are of single animals and going on size they were all females. Whether the creation of the ponds will see a general increase in amphibians, either individuals or new species, remains to be seen.

I have been told that Adder Vipera berus used to occur in some numbers thirty or forty years ago. This being the case it seems strange, considering the habitat, that there are no recent records. It could be that these old records were Grass Snakes in which case the decline is more easily understood as the reserve has 'dried out' considerably in that time. The recent records reflect the creation of the lost wetland habitats.

Moving onto birds, which are well represented, since 1976 there have been 90 species recorded of which 45 have bred. When breeding birds range from Nightingale Luscinia megarhynchos to Tree Pipit Anthus trivialis to Snipe Gallinago gallinago and Moorhen Gallinula chloropus it becomes obvious that although the site is only just over eighty acres it provides very distinct and diverse habitats.

One aspect of management has not been mentioned yet, that is the erection of nestboxes. About sixty boxes have been placed at various heights among the more mature areas of woodland. These boxes are important for breeding birds because the oldest trees are only about seventy years old and there is a grave shortage of natural nest holes.

The nestboxes have an interesting history over the last ten years. Initially the only species using the boxes was Tree Sparrow Passer montanus. This was the case during 1977, 78 and 79, three clutches being attempted in most cases each year. The first titmice started using the boxes in 1980, the only species recorded at this time being Blue Tit Parus caeruleus. It wasn't until two years later in 1982 that the first Great Tit Parus major was recorded using a nestbox. By this time it was clear that the Tree Sparrow population was decreasing, at first slowly and then rapidly. I have not recorded Tree Sparrow breeding on the reserve since 1983.

The next significant factor relating to nestboxes began at about the time the Tree Sparrows disappeared and that was the enlarging of the entrance holes on nestboxes. To start with only one or two boxes were affected but today a box is usually attacked in this way within weeks of being put up. The culprit is the Greater Spotted Woodpecker Dendrocopos major, a species which has become more numerous during the 1980's. Once the nestbox entrance has been enlarged the woodpeckers appear to use them to roost in. This behaviour has now been observed on several occasions, usually in early spring when boxes are being checked for signs of nest building. A box only three feet from the ground has been used for this purpose on one occasion.

During the winter months the boxes are used regularly by Woodmice Apodemus sylvaticus. I have recorded as many as four using the same box. I have been quite surprised to find Woodmice in boxes as high as seven feet above ground. They are also used in winter by Wrens Troglodytes troglodytes.

One or two larger nestboxes have also been erected for owls. So far the largest of these has been used on about four occasions by Tawny Owl Strix aluco. Last year the brood was unsuccessful due to Grey Squirrels Sciurus carolinensis which took over the box during the early stages of incubation. The box has regularly been used by Grey Squirrel during the winter months but this is the first time they have displaced the nesting Tawny Owl.

The creation of ponds has brought in several species which would not otherwise occur. These include Heron Avdeia cinerea and species of waders on passage, of which Greenshank Tringa nebularia now occurs most years on passage. Breeding ducks number two species, of which Mallard Anas platyrhynchos breeds every year. Since the ponds have been created Teal Anas crecca is an infrequent breeding species.

Raptors are now a regular feature on the reserve, the most common species at all times of the year is Sparrowhawk Accipiter nisus. It has been a regular visitor since the late 1970's and has been seen displaying in spring on two occasions in the early 1980's. A male was seen carrying food in 1984 and at last breeding was confirmed in 1986. The hen bird and two, possibly three, young were observed in the main open area during late July or early August on many occasions. 1986 was also the first year that Kestrel Falco tinnunculus was recorded breeding.

During the winter Merlin Falco colombarius has been a regular visitor although the last two winters numbers are down considerably. The reserve has been used as a roost and one winter three birds were recorded on more than one occasion. New records in 1986 were rather special, Marsh Harrier Circus seruginosus was recorded in July, followed by Hobby Falco subbuteo in August.

Mention has been made of Tawny Owl but to my mind Long-eared Owl Asio otus is one of the major 'stars' of the reserve. They are present all year. The winter roost numbers vary, the maximum was twelve birds one winter but this year there have been only three birds at the start of the winter and two since the New Year. Considering the influx this year I am surprised that numbers are so low.

At least one pair breed every year and two pairs have been recorded on one or two occasions. One nest in a Hawthorn bordering the road was used two years running, this being about fourteen feet above the ground. Most nests are much higher usually twenty or more feet up. Old Magpie Pica pica nests seem to be the most favoured nest used but Carrion Crow Corvus corone corone and old Squirrel dreys have also been used. Egg laying is usually completed in March and the last two years these early clutches have been blown out by gales late in that month. On both occasions a repeat clutch has been laid by mid April which has produced fledged young. Although four or five eggs are often laid the fledging rate is not high, three young being the highest number fledged from any nest. Two is more usual and on some occasions only one chick has survived.

I have photographed Long-eared Owl on several occasions and in my experience there appears to be a considerable difference in colour between the cock and hen. The cock bird is a very grey bird by comparison to the hen. This is particularly noticeable when a pair is observed roosting together in early

spring, usually close to the chosen nest site.

I had always wondered what happened to the pellets regurgitated by the young owls because I have never found any either in the nest or close by. One evening the hen bird answered my question when a pellet was produced by one of the young. She picked the pellet up and swallowed it. I presume that it would then have been regurgitated by her when she was away from the nest.

On occasions large prey is brought to the nest and on one such occasion what appeared to be an adult Moorhen was deposited in the nest by the hen bird. On another occasion the hen bird had great difficulty in reaching the nest as the prey was so heavy. I heard her crashing through the trees for several minutes before she fell headlong into the nest with her back to me. I didn't actually see the prey but it took about thirty to forty minutes strenuous effort on her behalf, tearing it up for the three half grown young owls.

One bird that nests in good numbers not far from the reserve is the Nightjar Caprimulgus europaeus. To date there is only one record of the species on the Turbary in late summer. I live in hope that with the increased open areas and some areas of young scrub left to develop on the drier heathland, it will eventually be recorded as a breeding species.

In winter the reserve is a major roost for Corvids. As many as two thousand plus come in as darkness falls. The vast majority of these are Rooks Corvus frugilegus with Jackdaw Corvus monedula making up the main flock that descends on the reserve. Carrion Crows Corvus corone corone come in in family parties. Jays Garrulus glandarius along with Magpies Pica pica come in before the main flock. The number of Jays is difficult to assess as they arrive from all directions in ones and twos. One evening however I happened by chance to be standing twenty yards from the Magpie roost and counted over 120 birds coming in. They make a considerable noise and the final dive to roost is akin to a falcon diving after prey. I didn't realise that Magpies could move so fast!

I suppose one of the most typical birds of birch woodland and scrub on sites like the Turbary is the Willow Tit Parus montanus. Its grating nasal call is one of the most distinctive sounds on the reserve.

Among the warblers, as is to be expected, the Willow Warbler Phylloscopus trochilus is the most numerous. With the ponds and reedbed areas having attracted Sedge Warbler Acrocephalus schoenobaenus I now eagerly await the first Reed Warblers Acrocephalus soirpaceus.

The areas of heathland are also an important habitat on the reserve and although it was not recorded in 1986 Tree Pipit Anthus trivialis is one of the birds that breeds most years on one or other of the drier open areas.

My observations on Yellowhammer Emberiza citrinella and Reed Bunting Emberiza schoeniclus lead me to the conclusion that the population dynamics of the two species are linked. In 1976 and 77 Reed Buntings could be classed as common on the reserve whereas Yellowhammers were absent. By 1983 these trends were reversed. Since 1984 the Reed Bunting has again put in an appearance and last year the two species were equally divided. It will be interesting to see which way the populations go.

A complete list of birds and their status on the reserve is included at the end of the address.

Finally a brief summary of mammals will complete my account of the wildlife in The Turbary. Of the Insectivores four species have been recorded these are Hedgehog Erinaceus europaeus, Mole Tulpa europaeu, Common Shrew Sorex araneus and Pygmy Shrew Sorex minatus. On occasions I have noticed several dead shrews lying in the reserve at one time. This seems a common occurrence that I have noticed on other sites, but one I cannot explain.

I have observed bats on the reserve but must admit I do not know which species occur. Rabbit Orytolagus cuniculus is common and Hare Lepus capensis is occasionally recorded.

Rodents are represented by Grey Squirrel and woodmouse which I have already mentioned, three species of vole and although I haven't seen signs of it Harvest Mouse Micromys minutus was recorded by Frank Brazier when he was manager of the reserve.

Fox Vulpes vulpes is present at all times and breeds every year. There are three main breeding areas on the reserve which appear to be used in turn, the same earth not being used two years running. Stoat Mustela erminea and Weasel Mustela nivalis are seen on occasions. A wasps nest was found dug up on one occasion which suggests Badger Meles meles occurs, but no other signs of them visiting the reserve have been recorded.

A deer, which I presume by the description to be a Roe Deer Capreolus capreolus, was seen entering the reserve one evening two winters ago. They are on the increase and are entering gardens in Howden, just north of The Isle causing considerable damage during the hours of darkness.

Much more recording of all species on the reserve is now of great importance so that the effect of management can be fully monitored. That is in the future. It just remains for me as I finish my presentation to thank the Trust for the faith, and support they have shown in me, allowing me to do major management on the reserve, which has been of a quite radical and I believe pioneering nature. I hope that faith has been justified.

List of birds recorded on reserve since 1976 and their status

Little Grebe Tachybaptus ruficollis

One record only in 1986. Bird spent 3rd, 4th and 5th August on Steve's pond.

Heron Ardea cinerea

Recorded in late summer as a visitor. Usually single birds but on one occasion 3 recorded round ponds at same time.

Mallard Anas platyrhynchos

One/two pairs breed every year. Only present late winter to early summer.

Teal Anas crecca

Occasional as breeding species otherwise an infrequent visitor. Maximum recorded at one time 6 birds late summer.

Sparrowhawk Accipiter nisus

Common winter visitor with numbers increasing since 1980. Birds seen displaying from 1983 male carrying food 1984 breeding confirmed 1986.

Hen Harrier Circus cyaneus

Occasional winter visitor.

Marsh Harrier Circus aeruginosus

One record July 1986. Bird got up from reedbed.

- Merlin Falco columbarius
Winter visitor, occasionally birds on roost on reserve. As many as 3 individuals used reserve one winter.
- Hobby Falco subbuteo
One record August 1986.
- Kestrel Falco tinnunculus
Infrequent visitor at all times of the year. One breeding record 1986.
- Red-legged Partridge Alectoris rufa
Occasional visitor. May have bred.
- Partridge Perdix perdix
Occasional visitor. May have bred.
- Quail Coturnix coturnix
Recorded 1986.
- Pheasant Phasianus colchicus
Present all year and regular breeder.
- Moorhen Gallinula chloropus
Has become more common, spring and summer. Now breeds.
- Lapwing Vanellus vanellus
Isolated records as a visitor to area of ponds.
- Snipe Gallinago gallinago
Numbers fluctuate, in wet winters numbers are highest. Infrequent breeding species.
- Jack Snipe Lymnocyptes minimus
One record, spring.
- Woodcock Scolopax rusticola
Present all year, breeds.
- Curlew Numenius arquata
One record.
- Green Sandpiper Tringa ochropus
Rare but regular passage migrant.
- Common Sandpiper Tringa hypoleucos
One record at Steve's Pond 14th August 1986.
- Greenshank Tringa nebularia
Rare but regular passage migrant, has been recorded on Spring and Autumn passage.
- Redshank Tringa totanus
One record of bird in Spring.
- Black-headed Gull Larus ridibundus
One record of bird at Pantry's Pond.
- Stock Dove Columbaenas
Record all months, no breeding record.
- Wood pigeon Columba palumbus
Present all year may number several hundred in winter when uses reserve as roost. Breeds.
- Turtle Dove Streptopelia turtur
Summer visitor breeds in small numbers.
- Collared Dove Streptopelia decaocta
Can be seen on edge of reserve all months, breeds.
- Cuckoo Cuculus canorus
Summer visitor
- Tawny Owl Strix aluco
Present all year and regularly breeds.
- Long-eared Owl Asio otus
Present all year, breeds every year occasionally two pairs.
- Short-eared Owl Asio flammeus
One record on west edge of reserve.

- Swift Apus apus
Feeds over ponds on occasions.
- Kingfisher Alcedo atthis
Occasional visitor to Skyers Drain. One record at Pantry's Pond.
- Nightjar Caprimulgus europaeus
One record of bird in Autumn 1984.
- Green Woodpecker Picus viridis
Infrequent visitor, breeding not proved.
- Great Spotted Woodpecker Dendrocopos major
Present all year, breeds.
- Lesser Spotted Woodpecker Dendrocopos minor
Two records of birds in Autumn.
- Skylark Alauda arvensis
Occasional visitor.
- Swallow Hirundo rustica
Frequent in summer over ponds and reedbed.
- House Martin Delichon urbica
Occasional summer visitor over ponds.
- Carrion Crow Corvus corone corone
Roosts in winter, breeds on occasions. One record of Hooded Crow.
- Rook Corvus frugilegus
Roosts in Autumn/Winter.
- Jackdaw Corvus monedula
Roosts in Autumn/Winter.
- Magpie Pica pica
Roosts in Autumn/Winter, present all year, breeds every year.
- Jay Garrulus glandarius
Present all year, two or three pairs breed most years.
- Great Tit Parus major
Present all year and breeds in good numbers using nest boxes.
- Blue Tit Parus caeruleus
Present all year and breeds in nestboxes. Common and most numerous of Titmice.
- Coal Tit Parus ater
Small numbers winter on reserve, occasional birds can be seen all months. No breeding records.
- Willow Tit Parus montanus
Present all year and breeds in small numbers.
- Long-tailed Tit Aegithalos caudatus
Present all year and breeds in small numbers.
- Treecreeper Certhia familiaris
Occasional winter visitor.
- Wren Troglodytes troglodytes
Present all year, common breeding species.
- Mistle Thrush Turdus viscivorus
Present all year and has bred.
- Fieldfare Turdus pilarus
Fairly common winter visitor
- Redwing Turdus iliacus
Occasional winter visitor.
- Song Thrush Turdus philomelos
Present all year, breeds.
- Blackbird Turdus merula
Present all year common breeding bird.
- Whinchat Saxicola rubetra
One breeding record 1977. No other records.

- Redstart Phoenicurus phoenicurus
One record of bird on Autumn passage.
- Black Redstart Phoenicurus ochruros
One record of bird on Spring passage.
- Nightingale Luscinia megarhynchos
Rare visitor has bred.
- Robin Erithacus rubecula
Common all year, breeds.
- Sedge Warbler Acrocephalus schoenobaenus
Records for 1985 and 1986, male singing and breeding suspected.
- Blackcap Sylvia stricapilla
Several pairs breed. Summer visitor.
- Garden Warbler Sylvia corin
Rare, records all refer to single birds in Spring.
- Whitethroat Sylvia communis
Regular summer visitor, has bred.
- Lesser Whitethroat Sylvia curruca
Uncommon summer visitor, has bred.
- Willow Warbler Phylloscopus trochilus
Common summer visitor, breeds.
- Chiffchaff Phylloscopus collybita
Regular summer visitor, breeds.
- Goldcrest Regulus regulus
Winter visitor.
- Spotted Flycatcher Muscicapa striata
Regular summer visitor, has bred.
- Hedge Sparrow Prunella modularis
Common, present all year, breeds.
- Meadow Pipit Anthus pratensis
Infrequent visitor may have bred.
- Tree Pipit Anthus trivialis
Regular summer visitor which breeds.
- Pied wagtail Motacilla alba
Infrequent visitor, most records are from summer months.
- Yellow Wagtail Motacilla flava
Frequents the banks of Skyers Drain. Summer visitor suspected breeding.
- Starling Sturnus vulgaris
Infrequent visitor.
- Greenfinch Carduelis chloris
Recorded all months of the year but not in large numbers, suspected breeding.
- Goldfinch Carduelis carduelis
Infrequent visitor.
- Linnet Acanthis cannabina
Numbers fluctuate, recorded all months and breeds.
- Redpoll Acanthis flammea
Large flocks some winters, odd birds recorded other times. Suspected breeding.
- Bullfinch Pyrrhula pyrrhula
Present all year in small numbers, breeds.
- Chaffinch Fringilla coelebs
Present all year in small numbers and suspected breeding.
- Brambling Fringilla montifringilla
Occasional winter visitor.
- Yellowhammer Emberiza citrinella
Has become more numerous as the open area extended, breeds.

Reed Bunting Emberiza schoeniclus

Present all year, population is now recovering after numbers dropped in early 1980's, breeds.

House Sparrow Passer domesticus

Can appear in all months usually on southern edge, across road from farm.

Tree Sparrow Passer montanus

Was common all year, bred in large numbers. Now rare, one record in February 1987 first for two years.

REPORT OF HON GENERAL SECRETARY 1986

Due to illness I did not take up my duties as your new Secretary promptly. In addition I came "green" to the job having had little previous experience in LNU matters. I am therefore most grateful for all the help I have had from the Executive and from Norah Goom in particular. We have been, for various reasons, without the support of a number of key officers for much of the year. Though there have been some setbacks we have struggled through and I hope members will find things on a firmer footing in 1987.

The Executive has met six times, rather more than usual. Our first meeting was the last at Joan Garlick's home before she moved out of the county. The Committee presented her with a book on ornithology with the Union's thanks for all her help over the years. This has included being President of the Ornithology Section, and Hon Treasurer and Membership Secretary. The Executive has missed the friendly and comfortable meetings at her home. We thank Christine Godfrey for making other arrangements, first at the NALGO club and latterly at Bishop Grossteste on the mornings of the winter meetings.

The Executive has been looking afresh at the activities of the Union - the Programme of Events, Recording, Publications and Recruitment and Finance. George Leachmann our Programme Secretary is much missed. Our first field meeting in 1987 is to be at the wood whose purchase by the Trust has been made possible because of donations by Mrs Leachmann. Goslings Corner has been described as the "little gem" of the Central Lincolnshire Limewoods. Because of its small size and the difficulty of the terrain, the first meeting is to be strictly limited in numbers. The Executive has asked Ken Rowlands to act as Programme Secretary until the AGM elections. A great deal of effort has gone into producing a whole year's programme at short notice, and we hope members find it helpful to have details all together in a small folder.

As the oldest natural history society in the county and the only one which deals with the study and recording of all groups of plants and animals the Lincolnshire Naturalists' Union continues to have an important role. In this it relies very much on its Section Officers. At the Section Officers meeting last month David Robinson paid a tribute to the President of the Geology Section Sir Peter Kent who died during 1986. In addition other Officers have felt unable to continue. The Executive has proposed that the Zoology Section has a President with Section Officers in ornithology, other vertebrates, lepidoptera and conchology.

Close liaison and exchange of information with other groups studying species in the County is most important. This has already been achieved with the Lincolnshire branch of the British Butterfly Conservation Society, and an initiative taken with the Lincolnshire Bat Group. The newly formed Amphibians

and Reptiles group has approached both the LNU and the Trust so that there will be links with both. The Executive is now looking at ways to co-operate with and support other groups in the County. These will continue to spring up either as local branches of national societies or because they feel they are filling a vacuum. The LNU, whilst welcoming the injection of enthusiasm and expertise in the County must also seek lines of communication. We must all work together or in the long run none will succeed.

If the species in which we are interested are to survive we must be concerned about the sites on which they depend. The LNU continues to support the County Trust. In addition it is not surprising that as Assistant Regional Officer for Lincolnshire your Hon General Secretary has found ways in which the LNU can assist the Nature Conservancy Council with the provision of information on species.

Advice has also been sought through the Hon General Secretary by the County and District Councils and by those concerned with the developments at Fulbeck. The LNU has been represented on the new Consultative Panels set up by the Forestry Commission, first at Bourne Woods where the ponds were discussed and then at Chambers Plantation complex where a new woodland trail is being developed.

There have been no new Publications in 1986 but progress has continued towards new works on aspects of both flora and fauna in Lincolnshire. The Executive intends to discuss developments in this area as a priority. We are grateful to our Hon Sales Secretary for all her efforts and to John East for continuing to act as Editor for Transactions. We hope that the 1986 edition will be expanded and are actively seeking articles from specialists who have recently completed studies in the County.

In all the areas which I have mentioned everything depends on the membership. At the time of writing recruitment is going well. A small group of members were responsible for the production of an exhibit and the manning of the stand at the Lincolnshire Show - an excellent opportunity to put the Society and its aims to a wider public. The Lincolnshire Naturalists' Union feels the loss of every single one of its active members - a point brought home when Rex Johnson paid tribute at the Section Officers Meeting to the recording work of Mr Edward Mason who died this year. It will be difficult to replace the consistent and thorough records of Lepidoptera he sent in for the Lincoln area every year. He was someone on whom to rely. That is what every organisation needs.

The Executive is looking at ways to provide a better service for members, including a more regular and expanded Newsletter. Please will you help us by making your wishes known and by taking on some of the responsibilities.

I look forward, with you, to the coming year and all the interest it holds.

Jane Ostler B Ed, M I Biol
Honorary General Secretary March 1987

SECTION OFFICERS' REPORTS

BOTANY 1986

Irene Weston

1986 has been quite a late year in respect of flowering periods. A record at

at the end of the year from Mrs Margaret Tointon of Louth, for Epipactis helleborine just coming into flower on 13 December at Little Cawthorpe Wood TF 348 842 was indicative of this. So too, records from Mrs J Ostler for Gagea lutea still in flower on 14 May and for Epipactis purpurata on 5 September.

There were also other surprises at the end of the year - Viola odorata was recorded in flower in the second week in October at Moor Closes by Mrs Ostler and there were many reports of primroses and hellebores in flower in gardens in November and December.

The work on the Herbarium of Miss E J Gibbons was completed by Easter 1986 and over 1,400 specimens have now been handed over to Mr Maurice Johnson at the County Museum. These will be stored alongside the County Herbarium which contains the Herbarium of Rev E A Woodruffe-Peacock and other smaller items. The latter herbaria are listed according to the London Catalogue but the E J Gibbons herbarium is catalogued according to the Dandy number which is the system used for the Lincolnshire Flora and Supplement. Each sheet carries the page number in the Flora, the Dandy number, date and place and is enveloped with data repeated on the envelope.

Most of the work of sorting, cleaning, remounting, packaging and labelling of the herbarium was done in the Adult Education Centre at Lincoln and was undertaken by the members of the Botany Class. We are most grateful for the use of storage and room facilities and to the group for many manpower hours. All the group are LNU members viz Mrs D J Adams, Mrs R Everatt, Mrs G Haines, Miss J Garlick, Miss J Knibb, Miss R Nickerson, Miss Z Harris, Mrs V Pennell, Mrs I Weston, Mrs M Wilson and the late Mr G Leachmann.

Hopefully more space and better arrangements for using the herbaria in the Museum might be a future subject for the Union Executive to consider.

A very great deal of work has been done in 1985 and 1986 on the historical botanical Grantham records by Mr S J Branson of Barrowby near Grantham which is of much interest, particularly to members in the Grantham area. It is hoped that some extracts can be made for publication in LNU Transactions. Meanwhile Mr Branson's work has been circulated to the Lincs Trust, the Union records and the NCC.

Field Meetings 1986

Sunday 27 April - Sempringham

Leader Miss N Goom. TF 101 333, TF 13. An arable area with stream and dykes, willow holt and old fishpond. Mr W M Peet recorded about 70 species complementing a previous list.

Saturday 17 May - South Elkington

Leader Mr K Wilson. TF 297 883, TF 28. 105 species were recorded including:- Adoxa moschatellina moschatel or town-hall clock, Phyllitis scolopendrium harts-tongue fern, Ophioglossum vulgatum adder's-tongue fern, Myosotis sylvatica wood forgetmenot, Hypericum tetrapterum square-stemmed St John's-wort, and Chelidonium majus greater celandine.

Wednesday 28 May - Claxby Wood

Leader Miss R Nickerson. TF 113 942, TF 19. Probably one of the nicest days

of the year. Claxby Wood is a mixture of primary woodland and replanted areas with variable habitats - springlines, flushes, etc and is mainly heavy clay. This year large quantities of Adoxa moschatel and the 2 Chrysosplenium golden saxifrages occurred and were seen at the meeting. The 2 violets Viola reichenbachiana and V. riviana were found for the first time in the wood, remedy for a long-term omission in the record and also seen were Daphne laureola spurge laurel, the old heads of the small teasel Dipsacus pilosus, Myosotis sylvatica wood forgetmenot, Carex strigosa lax-flowered wood-sedge, Equisetum telemateia giant horsetail and the hybrid avens Geum rivale x urbanum = G x intermedia. Also wood speedwell Veronica montana. New from the meeting was Dryopteris pseudomas golden-scale-male fern. A checklist of 120 sp made from a number of earlier visits was distributed prior to the meeting.

Adoxa moschatellina found on these last 2 field meetings is worth hunting for early in the year. 1986 was a particularly good year for it.

Saturday 6 September - Wrawby Moor

Leader Mr D Burton. TA 028 120, TA 01. 221 species were recorded from this meeting and lists have been received from Mr W M Peet and Mrs V Wilkin. This area of birch/oak woodland and heathland with sand over limestone is very rich. Anagallis tenella bog pimpernel, Hydrocotyle vulgaris marsh pennywort and Carduus nutans musk or nodding thistle were seen and 3 new square records produced, see list.

Saturday 20 September - Turbary SE 70

Mr Peet recorded about 70 species including the rare fen and saw sedge Cladium mariscus, both yellow and purple loosestrife and ericaceous species. This Trust reserve is one of the most important areas of old turbary in the County and has considerable scientific interest, particularly in view of the extensive colonisation of the Sphagnum which is taking place under the present management policy. The Reserve Manager Mr G Trinder will be giving a detailed account of this area in his LNU Presidential Address in 1987.

Saturday 16 August - Girton Pits

Leader Mr V Knight. SK 824 676, SK 86. Mr Lammiman, Mr Wilson and Mr Peet sent in a list of 124 species for SK 86 in Notts, including Butomus umbellatus flowering rush, Rumex palustris marsh dock and Carduus nutans nodding thistle.

Recording Schemes 1986

1 The Post 1980 Lincs Atlas

Many records have been received from recorders but extra coverage of some of the squares will be needed if the project is to be ready for the 1990 deadlines. Most recorders added new species to their square totals but far fewer new 10 km square records have been made. There are still some elusive species and some appear to have disappeared from known habitats.

Mr W M Peet has done a massive review of the records for the Trust Reserves and roadside verges - also the Coastal recording. A group of new Union members - Mr & Mrs James Stobard, Mr & Mrs Martin Weaver and Mr 'Tub' Davey have sent in records from Holbeach.

The NCC recorders have sent in many new water plant records and I am most grateful for the co-operation of Trust and NCC recorders.

2 The BSBI Monitoring Scheme 1987 and 1988

A new monitoring scheme is being launched by the BSBI for 1987 and 1988. Details of this were given at Lancaster on Saturday 6 and Sunday 7 September - hence my apologies for absence for the Wrawby Moor meeting. I quote:

"The scheme has been accepted by the NCC who have agreed to finance it for a period of 3 years. The aim is to survey the flora of a sample of 10 km squares in Great Britain and Ireland (approx 10% of the total). Firstly to provide an objective assessment of those species which have changes in frequency over the last 25 years (25 years since the publication of the Atlas of the British Flora in 1962) and secondly to provide a network of 2 x 2 km square (tetrads from within the chosen 10 km squares, to be used in future to monitor changes in the flora.

The 10 km squares have been chosen by taking as a starting point square SV 91 in the Isles of Scilly and taking every 3rd square North and East to cover the Country. Within each of these the same 3 tetrads - A J & W have been chosen".

The Lincolnshire squares are as follows:

SK(43)81	
SK(43)84	SK(43)87
SK(43)87	SE(44)80
TF(53)11	TF(53)44
TF(53)14	TF(53)47
TF(53)17	TA(54)10
TF(53)41 from VC 53 (S Lincs)	TA(54)40 from VC 54 (N Lincs)

All BSBI members are invited to take part in the recording and records are to be sent to the recorders on especially provided cards.

Union/BSBI members who want to help in these squares and who would like to contact me will be most welcomed. Records will also be used for the Lincs Atlas.

One drawback to the new recording scheme is the large number of name changes on the new cards. These are taken from the new edition of Clapham, Tutin and Warbury "Excursion Flora of the British Isles" 3rd Edition 1981 and a useful book is "English Names of Wild Flowers", Edition 2 by J G Dony, S L Jury and F H Perring and published by BSBI.

3 River Surveys

Records have been sent in by recorders working the Great Eau and the Witham for the Anglian Water Authority Surveys. A new survey is being undertaken in 1987.

Plant Notes

A letter from Dr Alan Gray (once Junior member from Cleethorpes) now at Furzebrook Research Station, in response to material collected by Mr B Redman of Spartina maritima states "Lincolnshire is getting very famous for its northern limit coast plants" - and that the S. maritima is certainly the most northern colony in Great Britain.

Unfortunately a Wash expedition with Dr Gray and Mr Redman showed that Ruppia spiralis has certainly disappeared from those areas where it was seen in the 1980's, due to pollution and land use change. However Mr F Lammiman has recorded R. maritima at Howdens Pullover in N Lincs this year and Mr G Weaver (NCC Warden at Saltfleetby) from the reserve - also N Lincs.

A new site for Pilularia globulifera has been found at Sandtoft in N Lincs by Mr Martin Limbert. This is now the 3rd Lincolnshire record.

A new alien aquatic Crassula helmzii which has spread rapidly during the last decade reaching about 100 sites in England has been recorded again this year from Lincolnshire. (Mr T Smith and Mrs I Weston at Swanholme, Mr N Fowler at Metheringham, Miss H Stace at Double Rivers and Mrs E Pearce at Denton near Grantham).

Elodea nuttallii has rapidly spread over the County and is now very prolific at Burton Pits. Callitriche hermaphroditica has been found at a second site by Mr T Smith at Swanholme - not all that far from Whisby Pits (I W 1985) but the 2nd record for the County.

Aquatics have proved most interesting during 1986 and Mrs H Drewett and Mr T Smith of NCC recorded Ceratophyllum submersum at Culverthorpe. This is the softer of the 2 water hornworts and was last recorded in 1913 at Tattershall also Donington on Bain in 1906. There had been other checklist records, but there has been much confusion with records of the more common Ceratophyllum demersum. The NCC team of Mrs Drewett and Mr Smith have also re-recorded Equisetum sylvaticum from Bleasby Woods an old site for wood horsetail and Umbilicus rupestris wall pennywort from the walls of Tattershall Castle, where it had not been seen for some years. This was first recorded at Tattershall by Blair in 1727 and seen in 1904 by W W Mason - "where two hot summers then rendered it extinct". It was last recorded by S Monk in 1961 in Tattershall - so must come and go!

Mr Jonathan Spencer has also re-recorded a colony of Gagea lutea at Careby Wood and reports quite a large number of plants but none flowering.

Thelypteris palustris marsh fern has also been re-recorded at Crowle this year (R Frankish, H Stace and I Weston). The single plant is probably the same one as found in 1974, but the habitat is very much changed and the plant very much crowded.

Mr B Glover has recorded Orchis ustulata at Ancaster which is a completely new site - a single plant only.

Arable weed records of the now rarer species were thin in the ground this year but Scandix shepherd's needle was found at S Ferriby by Mr W Hopper, Sison amomum by Mr W Earnshaw and also Mr K Wilson and Mr F Lammiman and Euphorbia exigua by Mr K Wilson near Red Hill.

Mr Pat de Lap has recorded a very fine stand of Myrica gale near Peacock Hole, Laughton Common and Narthecium ossifragum has been seen by Mrs Wilkin in Laughton Forest. Two large patches of Convallaria majalis lily of the valley - about several hundred plants have also been found (P de Lap and I Weston) on the edge of the Forestry Commission wood at Scotter. These were exposed by ditching operations and the record is new for the area.

Mr N Broadbridge has also found a most interesting patch of Isatis

tinctoria woad, along a track made 2-3 years ago from New Holland Station to the sea.

My thanks are due to all who have sent in records for the squares and for the continued interest of the recorders in the project and their patience in answering queries and filling in 'pink' forms for their new records.

1986 Recorders Records were received from:-

Mrs D J Adams	Mr M Hopper	Mr & Mrs G S Phillips
Mr & Mrs A Binding	Miss Z Harris	Mr B Redman
Mr C G van den Bos	Miss J Knibb	Mr E J Redshaw
Mr J H Bratton	Mr F Lammiman	Mr & Mrs G R Reeve
Mr M H Broadbridge	Mr N Lamming	Mr T Smith (NCC)
Mrs P Cook	Mr P de Lap (FC)	Mr & Mrs J Stobart
Mr T Davey	Mr M Limbert	Miss H Stace (NCC)
Mrs H L Drewett (NCC)	Mr S Lorand	Miss S Slater
Mr W Earnshaw	Miss R Nickerson	Mr J Spencer
Mrs R Everatt	Mrs J Ostler (NCC)	Mr N Tarttelin
Mr C Faulkner	Miss M Palmer (NCC)	Mrs I Weston
Miss C Godfrey	Mr W M Peet	Mrs V Wilkin
Mr B Glover	Mrs V Pennell	Miss M Wingfield
Mrs K Heath	Miss S Peay	Mr & Mrs M Weaver
		Mr K Wilson

Members of Nottinghamshire University Botany Classes
Anglian Water Authority River Survey Teams

Records 1986

New records were received for the following 10 km squares. Order of records: SK(43), SE(44), TF(53), TA(54).

NVCR = New Vice County Record. VC53 (S Lincs) VC54 (N Lincs)

I = Introduced E = Escape P = Planted

All records 1986 unless otherwise stated.

Records J Stobart; combination of Mr & Mrs James Stobart, Mr & Mrs Martin Weaver and Mr 'Tub' Davey of Gedney.

SK(43)

SK(43) 83	Saxifraga granulata	H L J Drewett & T Smith
	Serratula tinctoria	H L J Drewett & T Smith
86	Hordelymus europaeus	H L J Drewett & T Smith
87	Echium vulgare	H L J Drewett & T Smith
88	Campanula latifolia	J Knibb & R Everatt
	Geranium pyrenaicum	J Knibb & R Everatt
	Hyoscyamus niger	K M & G R Reeve
	Symphytum officinale	J Knibb & R Everatt
89	Convallaria majalis	I Weston

SK(43) 91	<i>Eleocharis palustris</i>	H L J Drewett & T Smith
92	<i>Lactuca serriola</i>	J Ostler
93	<i>Adoxa moschatellina</i>	J Ostler
	<i>Dipsacus pilosus</i>	T Smith
	<i>Eriophorum angustifolium</i>	H L J Drewett & T Smith
	<i>Galium uliginosum</i>	H L J Drewett & T Smith
	<i>Lactuca serriola</i>	J Ostler
	<i>Ophioglossum vulgatum</i>	H L J Drewett & T Smith
	<i>Polygonum hydropiper</i>	H L J Drewett & T Smith
	<i>Senecio aquatilis</i>	H L J Drewett & T Smith
	<i>Serratula tinctoria</i>	H L J Drewett & T Smith
	<i>Silaum silaus</i>	H L J Drewett & T Smith
	<i>Symphytum orientale</i>	J Ostler
	<i>Sisymbrium altissimum</i>	J Ostler
94	<i>Orchis ustulata</i>	B Glover
	<i>Ranunculus auricomus</i>	T Smith
95	<i>Arenaria leptoclados</i>	V Pennell
96	<i>Amsinckia intermedia</i>	C Godfrey
	<i>Potamogeton berchtoldii</i>	H L J Drewett & T Smith
	<i>Callitriche hermaphroditica</i>	H L J Drewett & T Smith
		2nd COUNTY RECORD
97	<i>Ferula erecta</i>	H L J Drewett & T Smith
	<i>Elodea nuttallii</i>	I Weston

SE(44)

SE(44) 70	<i>Grassula helmzii</i> NVCR VC54	H Stace
	<i>Pilularia globulifera</i>	M Limbert
71	<i>Conyza canadensis</i>	I Weston
	<i>Sherardia arvensis</i>	I Weston
80	<i>Bidens cernua</i>	V Wilkin
81	<i>Luzula sylvatica</i>	V Wilkin
91	<i>Viscum album</i>	J H Bratton
92	<i>Elodea canadensis</i>	J H Bratton
	<i>Potamogeton densus</i>	J H Bratton
	<i>Lemna gibba</i>	J H Bratton
	<i>Petasites fragrans</i>	J H Bratton
	<i>Scandix pecten-veneris</i>	M Hopper

TF(53)

TF(53) 01	<i>Legousia hybrida</i>	W M Peet
02	<i>Azolla filiculoides</i>	J Ostler
	<i>Myriophyllum spicatum</i>	H L J Drewett & T Smith

TF(53) 03	<i>Ceratophyllum submersum</i>	H L J Drewett & T Smith
	<i>Elodea canadensis</i>	H L J Drewett & T Smith
	<i>Elodea nuttallii</i>	H L J Drewett & T Smith
	<i>Equisetum fluviatile</i>	H L J Drewett & T Smith
	<i>Hippuris vulgaris</i>	H L J Drewett & T Smith
	<i>Oxalis acetosella</i>	H L J Drewett & T Smith
	<i>Potamogeton berchtoldii</i>	H L J Drewett & T Smith
	<i>Potamogeton pectinatus</i>	H L J Drewett & T Smith
	<i>Stachys palustris</i>	H L J Drewett & T Smith
04	<i>Carex caryophyllea</i>	H L J Drewett & T Smith
	<i>Carex spicata</i>	H L J Drewett & T Smith
	<i>Elodea nuttallii</i>	H L J Drewett & T Smith
	<i>Potamogeton berchtoldii</i>	H L J Drewett & T Smith
	<i>Potamogeton circinatus</i>	H L J Drewett & T Smith
06	<i>Astragalus glycyphyllos</i>	A & A Binding
	<i>Cicerbita macrophylla</i>	N Lamming
	<i>Ononis spinosa</i>	W M Peet
08	<i>Hippuris vulgaris</i>	J Ostler
11	<i>Cyperus longus</i>	N Palmer & H L J Drewett
	<i>Equisetum palustre</i>	E J Redshaw
	<i>Heracleum mantegazzianum</i>	M Palmer & H L J Drewett
	<i>Nymphoides peltata</i>	M Palmer & H L J Drewett
	<i>Potamogeton pusillus</i>	M Palmer & H L J Drewett
	<i>Ranunculus circinatus</i>	M Palmer & H L J Drewett
	<i>Ranunculus lingua</i>	E J Redshaw
14	<i>Stellaria graminea</i>	H L J Drewett & T Smith
15	<i>Elodea nuttallii</i>	H L J Drewett & T Smith
	<i>Potamogeton obtusifolius</i>	H L J Drewett & T Smith
	<i>Ranunculus circinatus</i>	H L J Drewett & T Smith
	<i>Ranunculus trichophyllus</i>	H L J Drewett & T Smith
18	<i>Carex caryophyllea</i>	H L J Drewett & T Smith
	<i>Thalictrum flavum</i>	I Weston
26	<i>Carex pulicaris</i>	W M Peet
28	<i>Allium ursinum</i>	K Wilson
	<i>Arenaria leptoclados</i>	K Wilson
	<i>Armoracia rusticana</i>	K Wilson
	<i>Asplenium adiantum-nigrum</i>	K Wilson
	<i>Asplenium ruta-muraria</i>	K Wilson
	<i>Carex caryophyllea</i>	K Wilson
	<i>Cymbalaria muralis</i>	K Wilson
	<i>Elodea canadensis</i>	K Wilson
	<i>Eranthis hyemalis</i>	K Wilson
	<i>Euphorbia exigua</i>	K Wilson
	<i>Hordeum murinum</i>	K Wilson
	<i>Melilotus altissima</i>	K Wilson
	<i>Oenothera biennis</i>	K Wilson
	<i>Picris echoides</i>	K Wilson
	<i>Potamogeton pusillus</i>	K Wilson

TF(53) 28	Ruscus aculeatus Silaum silaus Solanum nigrum Symphytum officinale Taraxacum laevigatum	K Wilson K Wilson K Wilson K Wilson K Wilson
30	Hieracium pilosella	E J Redshaw
31	Acer campestre Erophila verna	W M Peet E J Redshaw
32	Althaea officinalis re-recorded Geranium pyrenaicum Scutellaria galericulata	J Stobart J Stobart E J Redshaw
33	Bupleurum tenuissimum Lycopsis arvensis Ranunculus baudotii	W M Peet J Stobart K Heath
36	Carex arenaria	S Lorand 1985
37	Silaum silaus Zannichellia palustris	W M Peet H L J Drewett & T Smith
38	Conyza canadensis Lolium multiflorum Medicago sativa	K Wilson K Wilson K Wilson
39	Geranium lucidum Hordeum jubatum Setaria viridia	K Wilson K Wilson K Wilson
41	Saponaria officinalis	J Stobart
42	Descurainia sophia Impatiens glandulifera Reseda lutea	J Stobart J Stobart J Stobart
43	Medicago arabica Salicornia perennis Stachys palustis	J Stobart J Stobart J Stobart
47	Catabrosa aquatica Dactylorhiza praetermissa Ranunculus lingua Ranunculus sardous	W M Peet K Wilson K Wilson W M Peet
49	Beta maritima	N S Tarttelin
57	Ceratophyllum demersum Ranunculus circinatus Ranunculus baudotii	H L J Drewett & T Smith H L J Drewett & T Smith H L J Drewett & T Smith
58	Potamogeton pusillus Ranunculus baudotii Ranunculus trichophyllus Veronica catenata	H L J Drewett & T Smith H L J Drewett & T Smith H L J Drewett & T Smith H L J Drewett & T Smith

TA(54)

TA(54) 01	Carex arenaria Cynoglossum officinale Samolus valerandi	V Wilkin V Wilkin V Wilkin
02	Allium vineale Carex spicata	W Earnshaw I Weston & M H Broadbridge conf R W David & A O Chater
	Dactylorhiza praetermissa Isatis tinctoria Sison amomum	J H Bratton W Earnshaw & M H Broadbridge W Earnshaw & M H Broadbridge
10	Carex panicea	H L J Drewett & T Smith
20	Arenaria leptoclados Conyza canadensis Impatiens glandulifera Juglans regia Sedum album Symphoricarpos rivularis Vinca major	K Wilson K Wilson K Wilson K Wilson P K Wilson K Wilson K Wilson
21	Beta maritima	K Wilson
30	Anacamptis pyramidalis Nymphoides peltata Rumex hydrolapathum Veronica filiformis	K Wilson G S & G Phillips H L J Drewett & T Smith W M Peet
40	Eryngium maritimum Trifolium scabrum	W M Peet K Wilson

MYCOLOGY 1986

Conditions for mycology this year were decidedly bad. The spring was cold and wet, with many late, hard frosts. Summer was mainly cold and wet until early August. From then until mid-September conditions were warm and wet, to be followed by dry (almost drought) conditions until early October. Towards the end of October early frosts appeared, and they obliterated all but the hardier types of fungi.

Fortunately the highlight of the year - a visit to the County by members of the British Mycological Society - took place during the good period in early September. A wide range of sites was visited, and a large number of records resulted, by some 60 members based on Bishop Grosseteste College in Lincoln. If the list is received before the 1987 Transactions are published, it will be included.

Ordinary field meetings of the Union this year, of course depending on the weather, gave varying results.

South Elkington, in TF28, was visited on the 17th May, and despite the weather and the time of year, 47 species were recorded, 1 new to the County, 23 new to TF28, 11 new to the site, and 12 previously recorded on the site.

We had held an autumn foray at this place in 1959. The new County record was the rust Milesina dieteliana (III), on Polypodium vulgare. The jelly fungus Calocera pallidospathulata, which was first described by Dr D A Reid of Kew from specimens from North Wales in 1970, and which has spread rapidly over most of the country, was present on conifer sticks. We now have it on record at 14 sites in Lincolnshire and S Humberside. Other finds included Polyporus badius on dead hardwood, Ganoderma adspersum on dead elm and Ganoderma applanata on living beech.

On the 28th May, Claxby Wood was very wet indeed, but the cold weather previously resulted in only 7 species records, 3 being new for TF19.

The Carlby area (including Newell Wood and Morkery Wood) was very dry, and only 13 species were recorded for the two woods (in TF01 and SK91, respectively), 4 being myxomydetes. Under the birches where we parked for tea, however, a good crop of four species of Russula was present. These were the green R. aeruginea, the pale pink R. betularum, the bright red R. nitida and the yellow R. ochroleuca.

On the 12th July, Usselby Plantation and the part of Willingham Woods on Walesby Moor, both in TF19, were very dry, and as with the Carlby area, only 13 species were recorded, six being new to TF19, including the Blister Smut Urocystis anemones on Ranunculus repens and some very bright yellow specimens of the myxomycete Fuligo septica on a dead log.

The meeting at Wrawby Moor/Elsham Woods on the 6th September was much more productive, and 87 species were recorded. Despite an autumn foray in 1954, and other forays by the local branch of the Lincs & S Humberside Trust, and the Scunthorpe Museum Society, and sundry normal meetings by the Union previously, 37 species were new for TA01. The records included Russula sororia and R. foetens, which are infrequent in the County, together with 6 other Russulas which are more common and more brightly coloured. Six species from the allied genus Lactarius were also found. Fruiting bodies of Fomes fomentarius were seen, giving yet another location for the species, and this, together with sites in Black Walk Nook, Atkinson's Warren (or Foxhills), Moor Farm, Holme Lane Plantation, Cross Holts and Doddington Wood found in 1986, brings the total locations to date for this species to 32. All these records were on birch.

The writer regrettably missed the President's Meeting at Epworth Turbary on the 20th September, but he managed to visit the site on the following day, when 35 species were recorded. Included in the list were many fruiting bodies of the Honey fungus (Armillaria mellea s.str.), which has been very prevalent all over the County this year, and further specimens of Fomes fomentarius were also found in quantity on the birches.

The annual autumn foray was this year held at Halliday Hill and Hendale Woods in TA10. Both woods were of mixed trees, and Halliday Hill Wood had many mature beeches. Permission was very kindly given by the Earl of Yarborough. Despite very dry conditions, and the fact that the woods were on quickly drained chalk substrate, a large turn-out of members on one of the pleasantest days of the year enabled a return of 87 species to be obtained. Two new County Records were found, namely the small violet-coloured Peziza ionella on the ground, and the smut Ustilago anomala in the inflorescence of some Polynonum persicaria. On the very short sump remains of a large beech, half a dozen specimens of the large, black myxomycete Brefeldia maxima were found in all stages. Calocera purpurea were found in Holcus mollis heads. Unusually, seven representatives of the Gasteromycetes were seen, including Lycoperdon lividum in an open space

in short grass, and the tiny spore ball 'cannon', Sphaerobolus stellatus on rotten wood. Some infrequent Russula parazurea, with their beautiful blue caps were under beeches, and many other agarics were listed. Boletes, however, were noticeable by their absence. The list included 19 further records for TALO and 55 new records for the wood concerned. This was excellent for the conditions appertaining.

Numerous sites have been visited again by way of private forays, L N Trust forays and WEA classes by Messrs J Rowe and K Rowland and the writer of this report, and other specimens have been sent in by Mrs J Osterfield, Mrs D Halliwell, Mrs I Weston, Mrs V Wilkinson, Mrs V Lorand, Mr F R Lammiman, Mr Saunders, Mr C Hutchinson, Mr G Posnett and several non-members of the Union. New record figures are not so high as in the past few years, but in the main they reflect the weather conditions. However, when the results of the British Mycological Society's Forays are to hand, previous figures will certainly be well surpassed. Details to hand at the moment are:-

	<u>Annual Fungus Foray</u>	<u>Other</u>
New County Records	2	6
New Grid Square Records	19	173
New Site Records	<u>55</u>	<u>112</u>
Totals	76	291
	—	—

Bluets (or Blewitts or Bluestalks) - both L.nuda and L.saeva are still being offered for sale at local auctions around Christmas time in quantity. For example, at the last auction in Gainsborough before Christmas 1986, there were four lots of up to 6 lbs. each for sale.

Mr Saunders of Welton reports that one of the large Supermarkets (albeit well south of the County) was offering for sale prepacked quantities of the Japanese 'SHIITAKE' mushrooms (Lentinus edodes) in September. Apparently they are being grown in Holland and imported into this country for retail sale. Mr Saunders states they have a pleasant taste, and he provided the writer with a specimen. It would be interesting to hear if anyone finds them on sale in this County.

In September, the writer had a telephone call asking if he had seen the 'very pretty mushrooms' which had appeared on the lawns in front of the Queen Elizabeth High School in Gainsborough. He investigated, and found them to be the notorious Honey Fungus (Armillaria mellea), together with the Beech Killer Meripilus giganteus. The latter fungus had caused the death and felling of two large beeches on the lawns, and another large tree was badly infected, with sporophores all the way round its base, necessitating felling. The Honey Fungus had apparently appeared this year on some of the roots of one beech, and had rapidly spread over quite an area of lawn, killing two small saplings of conifer and hawthorn in its progression. Expert advice was advised, in view of the other large trees nearby on the site, since whilst M.giganteus is not difficult to control, the Honey Fungus is very difficult, by virtue of its rapacious growth and methods of propagation and large variety of hosts.

In conclusion, thanks must be placed on record again for the ever present help we receive from various sources, in particular from Dr B Ing as concerns the Myxomycetes and Dr G M Waterhouse and her colleagues at Kew regarding the main groups of the fungi.

Fungus Foray, Halliday Hill Wood and Hendale Wood
11th October 1986 M R TA10

New County Records

Peziza ionella Quel (or P. gerardii Cke)	Hendale Wood	TA1008
Ustilago anomala J. Kunze	"	TA1008

New Records for TA10

Amanita rubescens (Halliday Hill) under mixed trees
 Conocybe subovalis (Hendale) in short grass
 Coprinus cinerea (Halliday Hill) on manure
 Lactarius quietus (Hendale) under broadleaf trees
 Lactarius vietus (Hendale) under birch
 Lepista nuda (Halliday Hill) under mixed trees
 Mycena capillaris (Hendale) on beech leaves
 Russula parazurea (Hendale) under mixed broadleaved trees
 Clavulina cinerea (Hendale) under oak
 Datronia mollis (Halliday Hill) on dead wood
 Tyromyces caesius (Hendale) on dead (?) conifer
 Lycoperdon foetens (Hendale) on ground
 Lycoperdon lividum (Hendale) in short grass in open
 Chlorosplenium aeruginescens (Hendale) on oak
 Dasyscyphus niveus (Hendale) on oak wood
 Orbilia xanthostigma (Hendale) on dead wood
 Conocybe mairei (Hendale) in very short grass in open
 Calocera pallidospatulata (Both woods) on conifer
 Peziza ampliata (Halliday Hill) on rotten wood

Other New County Records

Milesina dieteliana (Syd.) Magn. on Polypodium vulgare	S Elkington	TF2988
Armillaria polymyces (Pers.) Sing. & Clc. on broadleaf stumps	Rigsby Wood	TF4276
Basidioradulum membranaceum Bull.	Laughton	SE8400
Puccinia annularis (Str.) Rohl. III on <u>Teucrium scorodonia</u>	Moor Farm Res	TF2263
Conocybe macrocephala Kühn. & Sing. under beech/pine	Laughton	SE8400
Psathyrella marcescibilis (Britz.) Sing. under hedge in meadow	Walkerith	SK7892

BRYOLOGY AND LICHENOLOGY

M R D Seaward

The following records have been added to the registers since the up-dated information published in Trans Lincs Nat Un 21: 92-94 (1985).

Mosses

Aulacomnium androgynum (Hedw.) Schwaegr. + 6
Barbula recurvirostra (Hedw.) Dix. + 18

- B. revoluta Brid. + 14
B. rigidula (Hedw.) Mitt. +14
B. trifaria (Hedw.) Mitt. + 18
B. vinealis Brid. + 14, 17, 18
Campylopus introflexus (Hedw.) Brid. Stapleford Wood (13), 1983, N G Hodgetts;
 new vice-county record.
Ceratodon purpureus (Hedw.) Brid. + 18
Cratoneuron commutatum (Hedw.) Roth + 14
Dicranella staphylina Whitehouse + 18
D. varia (Hedw.) Schimp. + 18
Dicranoweisia cirrata (Hedw.) Lindb. ex Milde + 14
Drepanocladus aduncus (Hedw.) Warnst. + 14
Eucladium verticillatum (Brid.) Br.Eur. Haverholme Priory (14), 1983,
 C.R.Stevenson; first record for VC53 since 1878.
Eurhynchium striatum (Hedw.) Schimp. + 18
Fissidens bryoides Hedw. + 17, 18
F. crassipes Wils.ex Br.Eur. + 14
Gyroweisia tenuis (Hedw.) Schimp. Frampton (17), 1982, C R Stevenson & A J
 Moore; new vice-county record.
Hypnum cupressiforme Hedw. var. resupinatum (Tayl.) Schimp. + 18
Isopterygium elegans (Brid.) Lindb. + 5, 6
Leptobryum pyriforme (Hedw.) Wils. + 18
Orthodontium lineare Schwaegr. + 6, 14
Orthotrichum affine Brid. + 18
O. anomalum Hedw. + 18
O. diaphanum Brid. + 18
Plagiomnium affine (Funck) Kop. + 5
P. rostratum (Schrad.) Kop. (= Mnium longirostrum Brid.) + 17, 18
P. undulatum (Hedw.) Kop. + 18
Plagiothecium denticulatum (Hedw.) Br.Eur. + 6
Pleuridium acuminatum Lindb. + 18
Pohlia carnea (Schimp.)Lindb. (= P. delicatula (Hedw.) Grout) + 14, 18
P. nutans (Hedw.) Lindb. + 18
Pottia intermedia (Turn.) Furnr. + 18
Pseudoscleropodium purum (Hedw.) Fleish. + 18
Rhynchostegium confertum (Dicks.) Br.Eur. + 17
R. riparioides (Hedw.) C.Jens. + 5
Sphagnum recurvum P. Beauv. var. mucronatum (Russ.) Warnst. + 13
Tortula intermedia (Brid.) De Not. + 14
Trichostomum sinuosum (Mitt.) Lindb. ex Herzog + 18

Hepatics

- Lophocolea bidentata (L.) Dum. + 18
L. cuspidata (Nees) Limpr. + 5, 6, 18
L. heterophylla (Schrad.) Dum. + 5, 6
Lunularia cruciata (L.) Dum. ex Lindb. + 14
Radula complanata (L.) Dum. + 18

Lichens

- Acarospora veronensis Massal. + 6
Buellia griseovirens (Turner & Borrer ex Sm.) Almb. + 6
Caloplaca festiva (Ach.) Zwackh on acid gravestone, Riseholme (6), 1985,
 M R D Seaward; new vice-county record.
C. flavovirescens (Wulfen) Dalla Torre & Sarnth. + 6
Centraria islandica (L.) Ach. + 10

Haematomma ochroleucum (Necker) Laundon + 6
Hypogymnia physodes (L.) Nyl. + 6
Lecanora intricata (Ach.) Ach. + 6
Lecideia granulosa (Hoffm.) Ach. + 6
Leproplaca chrysodeta (Vainio ex Räsänen) Laundon mortar crevices of limestone wall, Coleby (13), 1986, M R D Seaward; new county record.
Parmelia glabratula (Lamy) Nyl. ssp. fuliginosa (Fr. ex Duby) Laundon + 6
Phaeophyscia nigricans (Flörke) Moberg + 6
Rhizocarpon obscuratum (Ach.) Massal. + 6
Sarcogyne regularis Körber + 6
Sarcopyrenia gibba Nyl. on oolite, Great Ponton (15), 1986, C J B Hitch and P N Cayton; new county record.
Scoliciosporum chlorococcum (Graewe ex Stenhammar) Vezda + 6
Toninia aromatica (Turner ex Sm.) Massal. + 16
Trapelia obtegens (Th. Fr.) Hertel + 6
T. placodioides Coppins & P James on acid gravestone, Riseholme (6), 1985, M R D Seaward; new county record
Xanthoria polycarpa (Hoffm.) Rieber

I am indebted to Mrs P N Cayton, Dr C J B Hitch, Mr N G Hodgetts, Mr T Smith and Mr C R Stevenson for some of the above records, and to Dr B J Coppins for the identification/confirmation of the more critical material.

A SECOND LINCOLNSHIRE SITE FOR THE LICHEN CETRARIA ISLANDICA

The lichen Cetraria islandica - commonly but misleadingly known as Icelandic moss was first recorded at Linwood Warren over one hundred years ago by F A Lees. When the British Lichen Society visited North Lincolnshire in April 1977 it was still the only known site in Lincolnshire for this species - more typical of upland sites.

It has been recorded again in autumn 1985 at Woodhall Spa golf course during routine habitat mapping by the Nature Conservancy Council. Here it is confined to the roughs and bunkers which have bare sand in association with Cladonia spp of lichen and the heather Erica cinerea. Eight extensive patches have so far been discovered and fixed-point photography is being used to monitor spread in two areas. In 1987 it is proposed to map some areas using the same methodology described in the Lichenologist by Dr Seaward.

Management on the site is sympathetic to the lichen communities found in association with the heathers.

Ref: Seaward M R D (1978) Lichenologist 10: 111-122



"Cetraria islandica", drawn by Annette Binding

GEOLOGY

D N Robinson

Geological SSSIs

With the impending publication by the Nature Conservancy Council of a consultation document Earth Science Conservation in Britain, concern has been expressed about the revision of geological SSSIs in the county. At the time of publication of the second edition of The Geology of Lincolnshire (1976) there were less than ten, although others were under consideration in an attempt to cover the full range of rocks in the county. However, under the NCC's Geological Conservation Review, initiated to identify the key earth science sites requiring conservation, the criteria for selection of SSSIs are limited to those of at least national, rather than regional or local, importance, with minimal duplication of interest between sites, and with preference for sites with an assemblage of features or interests.

The expectation is that around 1,500 geological SSSIs will result, which means a reduction in the Lincolnshire and South Humberside localities. The Lincolnshire and South Humberside Trust for Nature Conservation has been consulted about proposed denotifications, and one proposed new site, but not the Union. Observations have been made to the NCC, including suggestions for other new sites, but apparently to no avail as they do not meet the new criteria. When the consultation document is published a fuller report will be made, and it will be suggested that a range of geological sites significant for the county should be considered for the Trust's Site Protection Scheme.

Ashby Hill flint

A photograph of Lincolnshire's largest flint, in the Ashby Hill chalk quarry near Ravendale (TA 241006), appeared in the second edition of The Geology of Lincolnshire. Recently the quarry was acquired by BIFFA Ltd of Grimsby for the tipping of industrial waste, and eventually the flint will be completely covered. A detailed survey of the flint was undertaken last year by Mr D Parsons, Keeper of Natural Science, Scunthorpe Museum and Dr R Toynton, Division of Continuing Education, Sheffield University, and a report will be published.

Kimmeridge 'logs'

At the base of the Chalk/Kimmeridge Clay quarry at South Ferriby (SE 990225) a small number of the so-called Kimmeridge 'logs' have been found. These are fossilised timber trunk sections c.1ft in diameter; one is in the Scunthorpe Museum, and I have another. Little is known about them and nothing has yet been found in published literature.

Burton on Trent Cliff

This 200 foot feature overlooking the lower Trent extends from Burton Stather to Alkborough. Exposures are few and very difficult to access along the partly wooded slope, but last year the construction of a new storm water channel near Burton Stather (SE 868187) revealed part of the full sequence:
Blown Sand

Frodingham Ironstone (or ferruginous limestone with abundant gryphaea) which forms much of the dip slope, with considerable local use as building stone.
Lower Lias - Scunthorpe Mudstones, with thin, hard limestones (containing scattered shiny brown limonite colite grains - forerunners of ironstone

deposition to follow); makes up the central and upper part of the slope. Upper Penarth (Phaetic) Beds - brownish shale and clay (some brick red) to 27ft thick.

Lower Penarth (Rhaetic) Beds - grey/black shales, up to 36ft thick. The Penarth Beds form the lower part of the slope, part covered with blown sand and estuarine alluvium; only exposed in landslips.

Winteringham-Horkstow Moraine

This low terminal morainic feature is made up of glacial sands and gravels with Skipsea Till. A disused sand and gravel quarry at (SE 950213) shows coarse, mainly flinty gravels, but also with sands and well defined patches of varved clays (indicating former pools within the moraine). The light scatter of erratic pebbles shows the usual assemblage of Scottish granites, porphyritic lavas and occasional schist, Carboniferous grits from Northern England, the fossiliferous Lias limestone and septarian nodules from the Jurassic of north-west Yorkshire, and more unusually Red Chalk (only transported a short distance from the north end of the Lincolnshire Wolds).

Tomling Hole

On the dissected southern Kesteven Plateau a number of sink holes occur towards the thinning edge of the boulder clay cover of the Lincolnshire Limestone. Fissures in the limestone were opened by periglacial action and exploited by meltwater run-off in later and post-glacial times. One of the best examples is Tomling Hole, a blind valley in the boulder clay near Burton Coggles. This is a 20-30ft incised inner valley within the broad trough, with a series of a dozen sink holes, the largest 5-6ft deep. During the late autumn the stream slowly advances down the valley, overtopping successive swallets towards the blind end. In rare conditions, as in the wet spring last year, the sink holes were not capable of draining all the water and the valley was completely flooded for a number of days, with the lakelet some 400 yards long, 30 yards wide and up to 30ft deep.

Lincoln Bypass

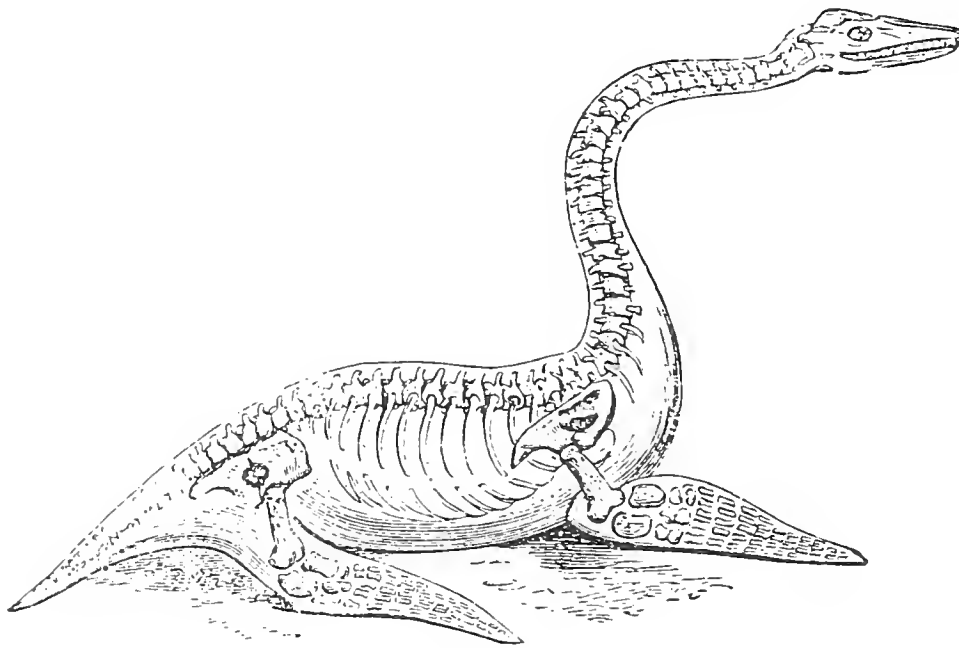
Construction of the Lincoln bypass in 1984-85 involved cutting through the escarpment of the Burton Cliff north of Lincoln. This revealed the bevelled nature of the thin cap of Lower Lincolnshire Limestone dipping gently east, below which is a thin sandy ironstone, with the steep face of Upper Lias clays and shales. From the rapidly weathered exposure of the Lias it was possible to collect ammonites - with sickle-shaped ornament belonging to Harpoceras and Hildoceras and with close-ribbed ornament belonging to Dactylioceras, together with belemnites and occasional lamellibranchs.

Welton Oilfield

The Welton oilfield, operated by BP Petroleum Development Ltd, was inaugurated last year. Developed at a cost of £30m and producing over 3,000 barrels a day, it is one of Britain's larger producing onshore fields, and includes the parishes of Scothern, Sudbrooke and Reepham. The field was discovered in 1981 with the drilling of the exploration well Welton 'A'. This was the first of 18 wells to be drilled in the field, 14 for oil production and four for the injection of water necessary to maintain pressure in the reservoir and to keep the oil flowing to the surface. The oil is at a depth of 1,500m in the Silesian Basal Sandstone of the Upper Carboniferous; it is light crude, but contains hydrogen sulphide. Reserves are estimated at 13 million barrels, giving the

field a life into the next century.

In preparing the ground for the gathering centre between Reepham and Sudbrooke, at a depth of less than six feet the fossil of a plesiosaur was found. Part of the Jawbone, vertebrae and fins were first found by Mr J Keen of Lincoln on a waste tip where material from the site was being dumped. With the aid of Mr D Parsons of Scunthorpe Museum and BP workmen using pneumatic drills most of the reptile's bones were recovered. The plesiosaur was about 15 feet long, with a long neck, turtle-like body, a short tail and four paddle-type fins. It lived in shallow Jurassic seas about 130 million years ago. The bones are now being removed from the sandstone before being prepared for display.



The Wash

In the mid-1960's attention was focussed on the Wash as a potential area for storing fresh water in bunded reservoirs. This generated extensive research not only on the engineering aspects, but also on the ecology of the bay, its geology and the processes of sedimentation within it. Published papers on the geology were listed in the 1983 Transactions.

The Wash was notified by the Nature Conservancy Council as a SSSI partly in 1972 and totally in 1976, and in 1977 was given a Grade 1* status denoting its international importance. Although the threat of large scale bunded reservoirs receded, there was increasing concern about the effect of reclamation of saltmarsh for agriculture. The Lincolnshire & South Humberside Trust for Nature Conservation established the Wash Study Group in 1978 which brought together the range of conservation interests to promote biological and physiographical research. The issue of reclamation was highlighted in the Lincolnshire County Council Coast Subject Plan (1982). The proposal of a limited moratorium on reclamation was upheld at a Public Local Inquiry the following year. The main area of contention centred on an understanding of the supply of sediment to the Wash and the processes of deposition.

In April this year the NCC and the Estuarine and Brackish Water Sciences

Association organised a Wash Conference at the Horncastle College where the results of the latest research were shared. The concern that the sediment supply is limited and that continued reclamation would irretrievably damage the scientific value appeared to be confirmed. The proceedings to be published will show the advances in physiographic studies, as exemplified by the following bibliography.

- Amos C L & Collins M B The combined effects of wave motion and tidal currents on the morphology of intertidal ripple marks: the Wash, UK Journ Sedim Petrol 48, 1978, 849-856
- Aranuvachapun S & Brimblecombe P Observations of turbid water in the Dowsing region of the North Sea from Landsat 1 East Midland Geogr 7, 3, 1979, 123-127
- Collins M B The Wash - sediment from freshwater sources Interim Rept 1972, 45pp Final Rept. Imp Coll. London 1975, 44pp
- Collins M B Suspended sediment sampling towers as used on the intertidal flats of the Wash, Eastern England Est Coastal Mar Sci 4, 1976, 46-57
- Collins M B, Amos C L & Evans G Observations of some sediment-transport processes over intertidal flats, the Wash, UK Spec Publs Internat Assoc Sedimentologists 5, 1981, 81-98
- Eisma D Supply and deposition of suspended matter in the North Sea Spec Publs Internat Assoc Sedimentologists 5, 1981, 415-428
- Evans G Intertidal flat sediments and their environment of deposition in the Wash Quart Journ Geol Soc London 121, 1965, 209-245
- Evans G & Collins M B Transportation and deposition of fine-grained sediments on the intertidal flats - Wash, England First Interim Rept, Nat Env Res Council 1971
- Evans G & Collins M B The transportation and deposition of suspended sediment over the intertidal flats of the Wash in Nearshore Sediment Dynamics and Sedimentation ed. J Hails & A Carr (London 1975) 273-304
- Inglis C C & Kestner F J T Changes in the Wash as affected by training walls and reclamation works Proc Inst Civil Engs 11, 1958, 435-466
- Kestner F J T The Old Coastline of the Wash Geogr Journ 128, 1962, 457-478
- Kestner F J T The supply and circulation of silt in the Wash IAHR Congress London Rept 1963, 231-238
- Kestner F J T The loose-boundary regime of the Wash Geogr Journ 141, 1975, 388-414
- McCave I N Fine sediment sources and sinks around the East Anglian coast (UK) Journ Geol Soc London 144, 1987, 149-152
- Shaw F Clay mineralogy of Quaternary sediments in the Wash embayment, Eastern England Marine Geology 14, 1973, 29-45
- Wilmot R D Mineralogical evidence for sediment derivation and ice movement within the Wash drainage basin, Eastern England Clay Minerals 20, 1985, 209-220
- Wilmot R D & Collins M B Contemporary fluvial sediment supply to the Wash Spec Publs Internat Assoc Sedimentologists 5, 1981, 99-110

Recent Publications relating to Lincolnshire Geology and Geomorphology

- Ashton M The stratigraphy of the Lincolnshire Limestone formation (Bajocian) in Lincolnshire & Rutland (Leicestershire) Proc Geol Assoc 91, 1980, 203-223
- Barker R D Geophysical Surveys near Goxhill, South Humberside Proc Yorks Geol Soc 44 (1), 1982, 119-129
- Barker R D, Lloyd J W & Peach D W The use of resistivity and gamma logging in lithostratigraphical studies of the Chalk in Lincolnshire and South Humberside Quart Journ Eng Geol London 17, 1984, 71-80

- Best J A, Parker S & Prickett C M The Lincolnshire Limestone (Nene College, Northampton 1981)
- Booth S The Sand and Gravel Resources of the country between Bourne and Crowland, Lincolnshire Mineral Assessment Report 130, 1983
- Buckland P C & Sadler J The nature of Late Flandrian alluviation in the Humber-head Levels East Midland Geogr 8 (8), 1985, 239-251
- Chappell N Wind erosion of agricultural lands in North Lincolnshire: cause prediction control (unpub Hons Geog dissert, Plymouth Polytechnic, 1986)
- Dean D R Tennyson and Geology (Tennyson Society, Lincoln 1985)
- Dugdale R E, Fox H R & Russell J R Nearshore sandbanks and foreshore accretion on the South Lincolnshire coast East Midland Geogr 7, 2, 1978, 49-63
- Fox H R Aspects of beach sand movement on a part of the Lincolnshire coast; a review of some results from recent tracer experiments East Midland Geogr 7. 2, 1978, 64-72
- Harper S A Sedimentation on the New Marsh at Gibraltar Point, Lincolnshire East Midland Geogr 7. 4, 1979, 153-167
- Hart M B & Bigg P J Anoxic events in the Late Cretaceous chalk seas of North-West Europe (I G C P Project No 58, Mid-Cretaceous Events, 177-185)
- Hodge C A H, Burton R G O, Corbett W M, Evans R & Seale R S Soils and their Use in Eastern England (Harpenden 1984)
- Kelly S R A & Rawson P F Some later Jurassic - mid Cretaceous sections on the East Midlands Shelf, England, as demonstrated on a field meeting 18-20 May 1979 Proc Geol Assoc 94 (1), 1983, 65-73
- Kelly S R A Bivalvia of the Spilsby Sandstone and Sandringham Sands (late Jurassic - early Cretaceous) of Eastern England Palaeontographical Soc (Monograph) 1984
- King C A M Changes on the Foreshore and the Spit between 1972 and 1978 near Gibraltar Point, Lincolnshire East Midland Geogr 7. 2, 1978, 73-82
- Lloyd J W & Howard K W F Environmental isotope studies related to groundwater flow and saline encroachment in the Chalk aquifer of Lincolnshire, England Isotope Hydrology 1, 1978, 311-325
- Pattison J & Williamson I T The saltern mounds of North-East Lincolnshire Proc Yorks Geol Soc 46, 1, 1986, 77-83
- Psilovikos A A Sediment analysis at Gibraltar Point, Lincolnshire East Midland Geogr 7, 3, 1979, 128-133
- Robinson D N The Buried Forests of Lincolnshire in A Prospect of Lincolnshire ed N Field & A White (Lincoln 1984) 6-10
- Robinson D N The Saltfleetby-Theddlethorpe Coastline Trans L N U 21, 1, 1984, 1-12
- Robson J D Soils in Lincolnshire IV: TF 45 Friskney Soil Survey Record 88, 1985
- Shennan I The nature, extent and timing of marine deposits in the English Fenland during the Flandrian Age Striae 14, 1981, 177-181
- Shennan I Interpretation of Flandrian sea-level data from the Fenland, England Proc Geol Assoc 83 (1), 1982 53-63
- Straw A Pre-Devensian glaciation of Lincolnshire (Eastern England) and adjacent areas Quaternary Science Review 2, 1983, 239-260
- Straw A & Clayton K M Eastern and Central England (London 1979)
- Wood C J & South E G Lithostratigraphical classification of the Chalk in North Yorkshire, Humberside and Lincolnshire Proc Yorks Geol Soc 42 (2), 1978, 263-287
- The Welton Oilfield Lincolnshire Life 26, 4, 1986, 28-29

Geological Survey maps 1:50,000
 Sheet 80 Kingston upon Hull (Drift)
 Sheet 89 Brigg (Drift)

LEPIDOPTERA 1986

Rex Johnson,

The 1984 and 1985 Lepidoptera reports both started with mention of a cold spring, followed by moderate Summer weather, and mild sunny days in the Autumn.

According to weather records for S. Humberside (J H D) 1986 was also Characterised by this pattern. There were 24 nights of frost in January, February was colder with 27 nights of frost (i.e. only one night above freezing), and March and April were also cold months (with 17 nights and 14 nights of frost respectively). Day temperatures were only warm in April from 24th-30th, when 62°F was reached, causing a sudden flurry of lepidoptera activity.

On 26th April I was on the Willingham Forest nature trails, and saw 4 Brimstone butterflies, 1 Comma and several Orange Underwing moths. At home Small Tortoiseshells and Peacocks emerged from hibernation, and Small Whites were flying in my garden. These species vanished as the warm days ended, and throughout May and June, temperatures remained low.

July was a good month, with temperatures in the 70s, but while August was sunny, day temperatures were mainly low. September was similar to August with sunshine and a good number of butterflies, and October was pleasant, with many species still on the wing.

As a result of the above, many lepidoptera species failed to emerge at the expected time, or came out over a much longer period than normal. When using the generator to attract moths in the Autumn, species turned up which one could have expected to see in May and June in most years. I couldn't help wondering at the time whether males and females were managing to find one-another in such circumstances, and guessed some species would decline. That seemed to be the case generally, but other species actually thrived, as will be detailed later. It was a poor year for moths according to all recorders, with numbers down on previous years.

BUTTERFLIES

The Whites had a reasonable year - the Large White was particularly numerous with a good migration in from the continent in August. The Small White was more plentiful than the Green-veined - which was common enough in some areas, but seemed more localised than usual. The same could be said for the Orange-tip. I personally saw few, and it seemed badly affected by the weather, but it was reported to be plentiful around Bardney and parts of Lincoln. The Brimstone had a poor year in the North of the county, but did well enough in the Centre and South, being seen in numbers particularly on Kirkby Moor. A single Clouded Yellow was seen at North Hykeham - possibly a genuine migrant, but few others were recorded in the country this season.

Wall butterflies had a poor year. The 1st generation was a thin one, and the 2nd generation even less extensive. The last butterfly record of the year was for a Wall Flying at Langholme on 6th November. In contrast the Speckled Wood did well. It spread into South Humberside reaching Messingham and the Brumby areas, and according to Mr Mason there were "uncountable numbers at Bardney Forest on 30th August". Graylings were plentiful in the usual spots, and the Large Heath was seen in numbers. Meadow Browns, Small Heaths and Ringlets all had an average or above year, and the Gatekeeper did well enough, but it has been more plentiful in times past. On the whole weather conditions

favoured this family (winter period passed by hibernating, grass-feeding larvae) and they were seen in larger numbers than had been anticipated.

Dingy and Grizzled Skippers were much reduced in usual haunts. Small and Large Skippers were around in reasonable numbers, and the Essex Skipper was positively identified in a number of sites in the S. and Centre of the County.

White Admiral populations thrived in central woodlands. On the morning of 13th July I counted over 30 specimens in one ride. Red Admirals were around in reasonable numbers late in the season, but they were scarce early on. One successfully emerged from winter hibernation and became active in a garden shed on the St Giles Estate, Lincoln, on 1st May, and it was released. Only small numbers of Painted Ladies were seen throughout the year. Numbers of Peacocks were well down on what is usual, but the species was common at Messingham at one time, and reported "plentiful" at Normanby-le-Wold by Mrs Brant, showing it did thrive in some districts. The Small Tortoiseshell had a very poor year indeed. Very few were seen and hardly anyone came across larval webs of the previous two species. The only person mentioning Small Tortoiseshells in numbers was Mrs Jane Ostler - who found over 30 hibernating in army buildings on 4th February and they were still in position on 15th March. The above findings were confirmed by Mr Pilcher in his lists. He named the Red Admiral as the commonest Vanessa, with only 2 or 3 Painted Ladies being seen and with the Small Tortoiseshell especially below numbers. The Comma did quite well and seemed to extend its range. A single Camberwell Beauty was seen on a number of occasions in a garden in Lincoln in October. Again, whether it was a genuine migrant, or a released specimen is impossible to know. Few were recorded in the country over the year.

Purple Hairstreaks were widely seen and had an excellent year. Ova and Larvae were found in the N. at Laughton. The White-letter Hairstreak survives well in the County. Its main stronghold remains near Lincoln, but there were records for other districts (e.g. Bourne in July, A.E.S). The Green Hairstreak was in its usual haunts along the East coast and it was pleasing to receive a photograph of it in a new inland location (near Grantham, June, Miss B Blakeborough). Sadly no-one recorded the Brown Hairstreak in any of its stages. The 1st generation of the Small Copper was poor, with some colonies seeming non-existent. Numbers did build up in some sites later in the year and the second brood was of moderate extent and went on late. Common Blues were not as plentiful as some years, but were quite widespread, with some flying until late October. There were several sightings of the Holly Blue. These seemed randomly spread across the County (Alford, Boston, Burton, Colsterworth, Lincoln, Scunthorpe, South Thoresby, Walesby, Wyberton etc.) One never knows where to expect this species but it is good to know that these records cover such a wide area and that in South Thoresby as reported by Mr Pilcher, its numbers are "building up".

Finally, for the butterflies, news has just been received of a Dark Green Fritillary seen at Little Cawthorpe (by Mr J Jaines & BBCS member). It was caught while feeding on Marjoram and was examined, photographed and released.

MOTHS

Most of the Hawkmoths expected were seen in very small numbers indeed. A few Poplar Hawks and Elephant Hawks came to light between mid-June and mid-July, but I've only heard of one Eyed-Hawk this season (a single larva - J H D). One Small Elephant Hawk came to light on the Messingham Reserve early in July (R J/J H D) and there is a mention for a Lime Hawk larva found fully grown

(by E Mason) at the foot of a Wych Elm at Lincoln and about to pupate. Elm, Alder and Birch are accepted alternative food plants for this species, so the larva may have been feeding on the tree where it was found. Of the migrant Hawkmoths, Mr Mason reported two sightings of the Hummingbird Hawk (Lincoln and Auburn on 2nd July and 16th July respectively) and Mr Pilcher recorded a further two (July and September). A single Convolvulus Hawk turned up on the Scunthorpe Steelworks early in August, but Mr Pilcher in writing about this species said, "it is the first year for many years that the Convolvulus Hawk failed to visit my Nicotiana blooms specially grown for their benefit". In reporting on other migrants, Mr Pilcher found the Silver Y "Far below number", but came across 5 Gold Spangle which were most likely immigrants and the Bordered Straw (see records later). I was amused when he wrote "I felt that only the Angle Shades really tried (to migrate) with 421 in two traps on 13/1X and 195 on 26/1X, but that was nothing like one year when we went round with buckets (and filled them) picking them up off the lawn round the traps". All in all the above constitutes a very thin list indeed and the Prominents seemed well reduced in number over the season.

Scarce Vapourer larvae were seen at Messingham early in May and it was good to have a further record of them from Lincoln (3 larvae, 24th May, AES). Small numbers of Oak Eggar and Pale Eggar were recorded but the most pleasing species in this family has to be the Lappet. There is often a single mention of this moth, but it is not normally recorded widely and one never knows where to expect it. This year larvae were found at the Lincs. Show Ground (June, R G), imagines were at Whisby in July (K Skelton), Goxhill (C Potts), Scunthorpe (J H D) and at Bassingham (4th July, R G).

Footmen, Ermines and Tigers also seemed reduced in numbers, though the Ruby Tiger seemed to thrive (J H D). A single Garden Tiger was reported (Broxholme, 28th July, R G) but no-one seemed to come across many "woolly-bear" larvae during the year.

Records of Clearwings are few and far between, so reports of the Osier Hornet Clearwing (previously named Lunar Hornet Clearwing) were pleasing. Larvae were reported in Sallow at Whisby in July (K Skelton). These are rarely seen as they feed internally in stems of Sallow, Willow and Poplars.

I was grateful for records sent in from Baston Fen and Dole Wood by Mr J Redshaw and Dr D Sheppard, from July and August. So far as I am aware a survey was undertaken of the two Trust reserves and 193 species were recorded for Baston, along with 116 for Dole Wood. The Maple Prominent was at Dole Wood on 30.6.86 and is a new County record. This species is generally found in woods on calcareous soils - foodplant Maple/occasionally sycamore - and is present in the S. in Devon and Somerset and up to E. Anglia. A second new record is for the Rosy Marbled Moth at Baston Fen on 14.7.86. This is found in "open" woodland and countryside and is local in Kent and up through Essex, Bucks., Suffolk etc. to Norfolk. There is doubt about the larval foodplant of this species in the wild (B Skinner, Moths of the British Isles, 1984), but in captivity flowers of Bramble, Broom and Tormentil are reported to be consumed. Other good finds from these reserves are listed later.

The Leopard Moth is not that frequently recorded, though it can be locally common, as it was in my garden when I lived in Scawby. One was found on 19th July at Goxhill (C Potts).

As recorded in the Lepidoptera report for 1985 (J H D) "The Highlight of the season was a Black Rustic which came to Rex Johnson's m.v. light on 9th

September at Messingham Sand Quarries". During September 1986 I re-visited this reserve to attempt to ascertain if the species was again present. Several m.v. sessions up to 27th September drew a blank. On 28th September, to make a change, Owlet Plantation was visited, and at the end of the evening, with the m.v. equipment partially dismantled, I flew a male Black Rustic. A further visit on 29th September attracted a female of this species. The 1985 report claimed "It is a very local moth in Eastern England but may be extending its range". It would appear that this is so!

I am grateful for all records submitted to me by LNU and BBCS members (particularly Alan Binding and Peter Cawdell from the latter organisation). It is important for a recorder to get an idea of how common species are, as well as where and when the rarities pop up. The most complete runs of records for 1986 were submitted by Rick Pilcher and Joe Duddington - and very interesting they are. Both these contributors sent in a list of around 30 species (out of hundreds identified during the year - 450+ species in Mr Pilcher's case) - which are infrequently recorded, or of great interest, or which add considerably to the records published in the "Butterflies and Larger Moths of Lincolnshire" book. These will be detailed later, but I must abstract one record from each list for special comment, as each constitutes a County record. Joe came across the Lesser Treble-bar at Keadby on 11th August. This species is most difficult to separate visually from the Treble-bar, but Joe is as sure of its identification as one can be - and also reckons he's found it on another site in the N. of the County. It will be confirmed by examination of genitalia as and when possible. Rick Pilcher also had an exciting find. He wrote "even poor years generally produce surprises. I was delighted to see a Cloaked Pug at Welton on the outside of the trap on 19th June". Mr Pilcher has now come across all the British pugs (49 in number) and has recorded 41 from Lincolnshire, breeding 38 of them from Lincolnshire Larvae. This is a real feat. The Lesser Treble-bar is double-brooded, found in May/June and August/September on commons and waste ground, and is found as far North as Yorkshire and Cumbria (foodplant St John's Wort). The status of the Cloaked Pug isn't known for sure. It is reported as single specimens from widely separated localities, and is considered a possible migrant, or to have been accidentally imported (foodplant Norway Spruce).

All butterflies and Macro moths can be identified by English names without confusion, so I have deliberately kept to these throughout this report, to make it more readable to the non-entomologist. Anyone wanting Latin names can convert English to Latin with ease and precision by referring to standard works such as South, or Skinner - or to "The Butterflies and Larger Moths of Lincolnshire and South Humberside" book (LNU 1983).

The following moth records are selected from lists submitted this year on the strength of their interest value, or since they add to the knowledge in the above LNU publication. Each record, for ease of cross-reference, is preceded by its book reference number, and for new county records, the preceding number is that under which it should be entered in the systematic list/index etc.

Please identify recorders by initials of contributors at the end of the report.

116. Maple Prominent, Dole Wood, 30.6.86, <u>new record</u>	DS
138. Brown-tail, single larva, Gibraltar Point, 14.6.86	RJ
173. Round-winged Footman, Baston Fen, 14.7.86	DS
178. Buff Footman, a few at Welton	REMP
221. Forester, Hartsholme Park, 5.7.86	JHD
also Moor Farm, 14.7.86	AES

280. Heart and Club, Common - Welton, Sth Thoresby, Gib. Pt.	REMP
287. Sand Dart, Common at Gibraltar Pt. and Saltfleetby	REMP
292. Pearly Underwing, casual migrant - not frequent, Baston Fen, 14.7.86	DS
298. Purple Clay, Holme Lane, 1.8.86	JHD
320. Green Arches, abundant June/July at Welton	REMP
340. Dark Bordered Straw, migrant - few records in past, a single speciman, Welton, 11.7.76	REMP
354. The Shears, Owlet Plantation, 26.6.86	JHD
371. Tawny Shears, Messingham N.R. 18.7.86	JHD
374. White Colon, Messingham N.R. 16.6.86	JHD/RJ
386. Lead-coloured Drab, common at both Welton & Sth. Thoresby	REMP
397. Striped Wainscot, few records, Scotton Common, 4.7.86	JHD
398. Obscure Wainscot, Messingham N.R. 3.7.86	RJ/JHD
415. Mere Wainscot, few previous records - abundant at Welton, 1986 also Baston Fen, August	REMP DS
424. Twin-spot Wainscot, a few at Sth. Thoresby, Aug/Sept.	REMP
452. Large Nutmeg, Baston Fen, 14.7.86	DS
457. Double-lobed, Baston Fen, 8.8.86	DS
479. Rosy Marbled, Baston Fen, 14.7.86, <u>new record</u>	DS
490. Orange Ear, (Frosted Orange), Messingham, 27.9.86	RJ
493. Lunar-spotted Pinion, very few records, a few late July at Welton	REMP
497. Angle-striped Sallow, (early record, usually out Aug/Sept) Owlet Plantation, 25.7.86	JHD
500. Olive Kidney (The Olive) few records since 1950s, Baston Fen, 8.8.86	DS
502A Drab Copper Underwing, Owlet Plantation, 29.9.86	RJ
513. Sycamore Dagger, Baston Fen, 14.7.86	DS
also a few at Welton and Sth. Thoresby	REMP
533. Mullein Moth, larvae feeding on Buddleia, Normanby-le-Wold, 13.7.86	CB
538. Tawny Pinion, few records only, one at Welton, 29.4.86	REMP
555. Black Rustic, Owlet Plantation, Moreton, 28th & 29th Sept. 1986	RJ
559. Merveille-du-Jour, Owlet Plantation, 3.10.86	JHD
564. Suspected, few previous records, but common at Welton	REMP
565. Brindled Green, Owlet Plantation, 3.10.86	JHD
576. Yellow-line Quaker, rarely recorded, but several at Sth. Thoresby, 1986	REMP
583. Barred Sallow, rarely recorded, again several Sth. Thoresby, 1986	REMP
603. Marbled White spot, common Sth. Thoresby & Welton also - strong colony at Scotton, 1st time recorded in Sth. Humberside, 1.7.86	REMP JHD
617. Nut-tree Tuffet, a few Sth. Thoresby	REMP
626. Gold Spangle, 5 seen Muckton/Welton area	REMP
644. The Blackneck, Wrawby Moor, 20.7.86	JHD
651. Herald, 2 to m.v. light (hibernates as imago), Boston, May.	AES
673. Blotched emerald, Owlet Plantation, 25.7.86	JHD
686. False Mocha, recorded in 1983 supplement to Lepidoptera book, several at Welton 1986	REMP
712. Ringed Wave (Dotted Border Wave), Scotton Common, 4.7.86	JHD
728. Flame Carpet, a few at Welton	REMP
746. The Rivulet, Baston Fen, 14.7.86	DS
750. Barred Rivulet, Welton	REMP
768. The Chevron, Messingham N.R. 21.9.86	JHD
773. Blue-bordered Carpet, few records, Baston Fen, 14.7.86	DS
783. Juniper Carpet, Holme Lane, 25.9.86 also Boston, Common in garden, Oct/Nov.	BE AES
788. Dark Umber, recorded on Supplement, 1983 - larva found 4th June on Blackthorn - 1st record for Sth. Humberside	JHD
804. Lesser Treble-bar, Keadby, 11.9.86 <u>new record</u>	JHD

810. Large Seraphim, (The Seraphim) Messingham N.R. 16.6.86 JHD/RJ
 also common at Welton REMP
811. Small Seraphim, few records, at Baston Fen, 14.7.86 DS
812. Brindle-barred Yellow, only few records, a few at Welton,
 Sth. Thoresby, REMP
814. Early Tooth-striped, Twigmore, 1st record for Sth. Humberside, 13.5.86 JHD
815. Oblique carpet, infrequent, Baston Fen, 16.7.86 DS
838. Cloaked Pug, one at Welton, 19.6.86 new record REMP
839. Shaded Pug, one previous record, Welton, Gib. Pt. a few 1986 REMP
844. Maple Pug, few previous records, common Welton 1986 REMP
852. Valerian Pug, larvae common Theddlethorpe REMP
869. Ochreous Pug, few records, larvae at Welton REMP
878. Oak-tree Pug, Welton, and Larvae at Sotby REMP
892. Scorched Carpet, common 1st brood, May 1986 Welton REMP
898. Barred Red, Scotton Common, 4.7.86 JHD
 also Walesby, 12.7.86 RJ
902. Sharp-angle Peacock, very few records, seen at Theddlethorpe,
 Welton and Sth. Thoresby, 1986 REMP
914. September Thorn, Owlet Plantation, 28.9.86 RJ
915. Early Thorn, Normanby-le-Wold, 11.8.86 CB
917. Purple Thorn, Owlet Plantation, 25.7.86 JHD
920. Feathered Thorn, Messingham, 4.11.86 WJ
921. Scalloped Oak Thorn, Normanby-le-Wold, 17.8.86 CB
952. Horse-chestnut Longwing, Scotton Common, 19.9.86 - only previous JHD
 record was for a single larva, identified by G Hyde

Sincere thanks are extended to the following for records submitted:-

Mr & Mrs A Binding, Miss B Blakeborough, Mrs C Brant, Mr P Cawdell, Mr J H Duddington, Miss C Godfrey, Miss N Goom, Mr R Goy, Mr J Jaines, Mrs W Johnson, Mr E Mason, Mrs J Ostler, Mr R E M Pilcher, Mr G Posnett, Mr J Redshaw, Mrs R M Rowe, Dr D Shepperd, Mr A E Smith, Mrs V Wilkin.

Sadly, Mr Edward Mason died shortly before this report was written. His records for 1986 were, as always, precise, full of interest and interspersed with knowledgeable comment. His contribution will be missed.

Rex Johnson, M Ed., FRES
 February 1987

AUTUMN FORAY OF THE BRITISH MYCOLOGICAL SOCIETY, 1986

H J Houghton

1986 was a red letter year for the Union in that the British Mycological Society held their Autumn Foray based on Lincoln at Bishop Grosseteste College. Some 60 members of the society spent a week in the district, and the sites visited included those in the following list:-

Auster Wood	(TF0719) (A)	Kirkby Moor NR.	(TF2262) (K)
Bourne Wood	(TF0721) (B)	Lynwode Warren	(TF1387) (L)
Bracken Wood	(TF1964) (Br)	Moor Farm Res.	(TF2263) (M)
Burton Pits	(SK9474) (Bu)	Scotton Common	(SK8798) (Sc)
Chambers Pl.	(TF1473) (C)	St Helens Wood	(TF2559) (S)
Fulsby Wood	(TF2560) (F)	Troy Wood	(TF2458) (T)
Gibraltar Point	(TF5558) (G)	Twyford Forest	(SK9423) (Tw)
Grimsthorpe Park	(TF0422) (Gr)	Woodhall G G	(TF2064) (Wg)

Haltham Wood	(TF2563) (Hm)	Woodhall Spa	(TF1963) (Ws)
Hartsholme Park	(SK9469) (H)	Willingham Wds.	(TF1888) (Wi)
Ivy Wood	(TF1473) (I)		

As reported elsewhere in these transactions in the Mycology Report for 1986, the foray took place during the short period when conditions were excellent for collecting, from the 8th to the 15th September, and a large 'bag' was obtained, which added numerous records to the Lincs. & South Humberside List. Very full details have been received by the writer of this report by way of a computer print-out, and since it is extensive, it is not possible to give full results here. Facts and figures are as follows:-

Total number of records reported	2092
Total number of different species fully named	746
Number of new County records	214
Extra new Grid Square records	601
Extra new site records	461

It should be noted that this is the first time the British Mycological Society have visited Lincolnshire and S Humberside for their Autumn Foray. Spring Forays were held in 1949 and 1970, but there are, of course, considerably less fungi about in the spring.

A list of the new County records is given below, sites being coded in accordance with those in the site list above, but author citations are omitted.

<u>Order</u>	<u>Species</u>	<u>Site</u>
<u>Agaricales</u>	<i>Agaricus macrosporus</i>	A
	<i>Armillariella bulbosa</i>	Tw
	<i>Calyprella capula</i>	G
	<i>Conocybe hadrocystis</i>	Tw
	<i>Conocybe mesospora</i>	B
	<i>Conocybe semiglobata</i>	B
	<i>Coprinus acuminatus</i>	Tw
	<i>Coprinus impatiens</i>	Gr
	<i>Coprinus leiocephalus</i>	B
	<i>Coprinus truncorum</i>	F
	<i>Cortinarius multifluus</i>	Tw
	<i>Cortinarius variicolor</i>	A
	<i>Crepidotus phillipsii</i>	B
	<i>Galerina atkinsonia</i>	Wg
	<i>Hebeloma hiemale</i>	H
	<i>Hygrocybe fornicata</i>	H
	<i>Hygrocybe internedia</i>	K
	<i>Hypholoma elongatum</i>	H
	<i>Inocybe brunneoatra</i>	Tw
	<i>Inocybe griseolilacina</i>	Tw
	<i>Inocybe jurana</i>	Gr
	<i>Inocybe subtigrina</i>	K
	<i>Lyophyllum fumatofoetens</i>	S
	<i>Lyophyllum loricatum</i>	T
	<i>Melanoleuca cinerascens</i>	C
	<i>Melanoleuca cinereifolia</i>	G
	<i>Melanoleuca strictipes</i>	B
	<i>Mycena amygdalina</i>	B
	<i>Mycena longiseta</i>	L
	<i>Naucoria striatula</i>	H

<u>Order</u>	<u>Species</u>	<u>Site</u>	
<u>Agaricales</u> (Contd)	<i>Pluteus romellii</i>	F	
	<i>Psathyrella connatum</i>	Tw	
	<i>Psathyrella fusca</i>	B	
	<i>Stropharia cyanea</i>	Gr	
	<i>Tubaria romagnesiana</i>	B	
<u>Aphyllorphorales</u>	<i>Amphinema byssoides</i>	Tw	
	<i>Athelia tessulata</i>	Tw	
	<i>Bolbitiomyces farinosus</i>	F	
	<i>Clavulina pulchra</i>	Gr	
	<i>Clavulinopsis cineroides</i>	Gr	
	<i>Peniophora cinerea</i>	Tw	
	<i>Steccherinum fimbriatum</i>	I	
	<i>Tomentella pallidofulva</i>	Tw	
	<i>Tomentella subferruginea</i>	Tw	
	<u>Boletales</u>	<i>Boletus aestivalis</i>	H
		<i>Boletus porosporus</i>	Tw
<i>Boletus spadiceus</i>		L	
<i>Leccinum holopus</i>		Gr	
<i>Leccinum oxydabile</i>		A	
<i>Leccinum variicolor</i>		K	
<i>Suillus fluryi</i>		Tw	
<i>Bovista pusilla</i>		G	
<u>Lycoperdales</u>			
<u>Russulales</u>	<i>Lactarius acerrimus</i>	Gr	
	<i>Lactarius azonites</i>	Tw	
	<i>Lactarius circellatus</i>	C	
	<i>Lactarius trivialis</i>	K	
	<i>Russula brunneoviolacea</i>	H	
	<i>Russula chloroides</i>	B	
	<i>Russula cyanoxantha</i> var. <i>peltereaui</i>	Tw	
	<i>Russula firmula</i> var. <i>luteoviridans</i>	B	
	<i>Russula luteotacta</i>	Gr	
	<i>Russula romellii</i>	BU	
	<u>Sclerodermatales</u>	<i>Scleroderma cepa</i>	T
	<u>Tremellales</u>	<i>Cristella sulphurea</i>	I
	<u>Uredinales</u>	<i>Melampsora hypericorum</i>	Tw
		<i>Melampsora larici-populina</i>	B
<i>Melampsora lini</i> var. <i>lini</i>		Tw	
<i>Puccinia acetosa</i>		Tw	
<i>Puccinia circaeae</i>		Gr	
<i>Puccinia cnici</i>		Tw	
<i>Puccinia magnusiana</i>		K	
<i>Puccinia pygmaea</i>		B	
<i>Puccinia tenaceti</i>		G	
<i>Puccinia veronicae</i>		S	
<i>Pucciniastrum guttatum</i>		Wi	
<i>Sphacelotheca epilobii</i>		Tw	
<i>Urocystis agrophyri</i>		G	
<u>ASCOMYCOTINA.</u>			
<u>Clavicipitales</u>	<i>Peckiella lateritia</i>	Tw	
	<i>Peckiella viridis</i>	K	
<u>Diaporthales</u>	<i>Diaportha occulta</i>	Gr	
	<i>Gnomonia rostellata</i>	Tw	
	<i>Melanconis alni</i> (Conidial)	S	
	<u>Dothidiales</u>	<i>Glioniopsis praelonga</i>	G
	<i>Hormotheca robertiana</i>	Tw	
	<i>Leptosphaeia ammophilae</i>	G	

<u>Order</u>	<u>Species</u>	<u>Site</u>	
<u>Dothidiales</u> (Contd)	<i>Leptosphaeria culmifraga</i>	K	
	<i>Microthyrium microscopicum</i>	Tw	
	<i>Mycosphaerella allicina</i>	G	
	<i>Mycosphaerella recutita</i>	G	
	<i>Plagiostoma pustulata</i>	B	
	<i>Stomiopeltis betulae</i>	S	
	<i>Eudarluca caricis</i> (Conidial)	Tw	
	<i>Mycosphaerella killiani</i> (Conidial)	B	
	<u>Erysiphales</u>	<i>Erysiphe aquilegiae</i>	Ws
		<i>Erysiphe asperifoliorum</i>	Tw
<i>Erysiphe depressa</i>		Gr	
<i>Erysiphe galeopsidis</i>		Gr	
<i>Erysiphe hyperici</i>		Tw	
<i>Erysiphe knautiae</i>		L	
<i>Erysiphe limonii</i>		G	
<i>Erysiphe ranunculi</i>		Gr	
<i>Erysiphe sordida</i>		H	
<i>Erysiphe tortilis</i>		Tw	
<i>Erysiphe verbasci</i>		Ws	
<i>Microsphaera beaumeri</i>		Tw	
<i>Microsphaeria berberidis</i>		H	
<i>Podosphaeria aucupariae</i>		K	
<i>Podosphaeria clandestina</i> Li		Li	
<i>Podosphaeria tridactyla</i>		B	
<i>Sphaerotheca alchemillae</i>		Gr	
<i>Sphaerotheca epilobii</i>		H	
<i>Sphaerotheca erigerontis-canadensis</i>		Gr	
<i>Sphaerotheca ferruginea</i>		Tw	
<i>Sphaerotheca plantaginis</i>		Li	
<i>Sphaerotheca xanthii</i>		C	
<i>Uncinula bicornis</i>		Tw	
<u>Helotiales</u>		<i>Beloniopsis filispora</i>	Ws
		<i>Betulina fuscostipitata</i>	K
		<i>Bisporella neglecta</i>	G
		<i>Calycellina leucella</i>	L
		<i>Calycellina punctiformis</i>	B
		<i>Ciboria viridifusca</i>	Gr
		<i>Ciliolarina laricina</i>	F
		<i>Claussenomyces prasinulus</i>	C
		<i>Crocicreas starbeckii</i>	C
	<i>Dasyscyphus brevipilus</i>	Ws	
	<i>Dasyscyphus fugiens</i>	H	
	<i>Dasyscyphus tenuissimus</i>	Tw	
	<i>Diplocarpon bloxamii</i>	Tw	
	<i>Hamatocanthoscypha laricionis</i>	B	
	<i>Hyaloscypha lachnobrachya</i>	Ws	
	<i>Hyaloscypha velenovskyi</i>	Gr	
	<i>Hymenoscyphus laetus</i>	K	
	<i>Hymenoscyphus vernua</i>	F	
	<i>Leptotrochila ranunculi</i>	Tw	
	<i>Leptotrochila verrucosa</i>	L	
	<i>Micropodia pteridina</i>	S	
	<i>Micropodia grisella</i>	F	
	<i>Mollisia amenticola</i>	S	
	<i>Mollisia caricina</i>	H	
	<i>Mollisia pteridina</i>	F	

<u>Order</u>	<u>Species</u>	<u>Site</u>	
<u>Helotiales</u> (Contd)	<i>Mollisia ramealis</i>	F	
	<i>Mollisia revincta</i>	S	
	<i>Mollisia rubi</i>	Tw	
	<i>Orbilia curvatispora</i>	Tw	
	<i>Orbilia sarraziniana</i>	Tw	
	<i>Ploettnera exigua</i>	Tw	
	<i>Poculum sydowiana</i>	C	
	<i>Psilachnum pteridigenum</i>	F	
	<i>Pyrenopeziza lychnidis</i>	G	
	<i>Pyrenopeziza plantaginis</i>	L	
	<i>Scutellinia cejpi</i>	F	
	<i>Scutoscypha fagi</i>	Tw	
	<i>Spilopodia ranunculi</i>	Wi	
	<i>Trochila ilicina</i>	H	
	<i>Unguicularia millepunctata</i>	B	
	<i>Phacidium lacerum</i>	Wi	
	<u>Hypocreales</u>	<i>Hypocrea citrina</i>	S
		<i>Nectria candicans</i>	Ws
	<u>Lecanorales</u>	<i>Sarea difformis</i>	Tw
	<u>Pezizales</u>	<i>Leucoscypha leucotricha</i>	F
	<i>Octospora convexula</i>	L	
	<i>Peziza limnea</i>	T	
	<i>Scutellinia umbrorum</i>	S	
	<i>Sepultaria arenosa</i>	C	
	<i>Desmazeriella acicola</i> (conidial)	S	
<u>Polystigmatales</u>	<i>Phyllachora graminis</i>	Gr	
<u>Rhytismatales</u>	<i>Ascodichaena rugosa</i>	K	
	<i>Rhytisma punctatum</i> (conidial)	F	
<u>Sordariales</u>	<i>Sordaria humana</i>	B	
<u>Sphaeriales</u>	<i>Chaetosphaerella callimorpha</i>	Tw	
	<i>Paradidymella tosta</i>	G	
	<i>Phomatospora berkeleyi</i>	K	
	<i>Xylaria longipes</i>	F	
<u>MASTIGOMYCOTINA</u>			
<u>Peronosporales</u>	<i>Albugo tragopagonis</i>	Gr	
	<i>Peronospora sordida</i>	Wg	
	<i>Peronospora trifoliorum</i>	B	
<u>MYXOMYCOTA</u>			
<u>Physarales</u>	<i>Diderma simplex</i>	T	
	<i>Didymium listeri</i>	I	
	<i>Didymium minus</i>	K	
	<i>Physarum pusillum</i>	G	
<u>Trichiales</u>	<i>Arcyria oerstedtii</i>	H	
	<i>Oligonema schweinitzii</i>	F	
<u>ANAMORPHIC FUNGI</u>	<i>Acrogenospora sphaerocephala</i>	Gr	
	<i>Arthrimum phaeospermum</i>	K	
	<i>Ascochyta mercurialis</i>	Tw	
	<i>Ascochyta metulispora</i>	Tw	
	<i>Camposporium cambrense</i>	G	
	<i>Camposporium pellucidum</i>	Gr	
	<i>Candelabrum spinulosum</i>	S	
	<i>Cladosporium herbarum</i>	S	
	<i>Dictyochaeta fertilis</i>	S	
	<i>Epicoccum nigrum</i>	I	
	<i>Gibellula aranearum</i>	S	
	<i>Haplariopsis fagicola</i>	S	

<u>Order</u>	<u>Species</u>	<u>Site</u>
<u>ANAMORPHIC FUNGI (Contd)</u>	<i>Heliscus stellata</i>	K
	<i>Leptostroma juncacearum</i>	K
	<i>Menispora ciliata</i>	Gr
	<i>Microdiscula phragmitis</i>	K
	<i>Phaeostalagmus tenuissimus</i>	S
	<i>Phragmocephala elliptica</i>	S
	<i>Ramularia didyma</i>	W
	<i>Ramularia rubella</i>	Tw
	<i>Ramularia scrophulariae</i>	Gr
	<i>Septoria rubi</i>	G
	<i>Sphaeropsis sapinea</i>	S
	<i>Spondilocladiopsis cupulicola</i>	S
	<i>Sporidesmiella hyalosperma</i>	Tw
	<i>Sporidesmii goidankii</i>	Tw
	<i>Stilbella clavispora</i>	F
	<i>Stilbella clavatula</i>	Gr
	<i>Tricladium castaneicola</i>	S
	<i>Tricladium splendens</i>	K
	<i>Tubercularia vulgaris</i>	Tw

SOME LINCOLNSHIRE PLANT GALLS

C S V Yeates - Rotherham Museum,

The following plant galls were noted on the British Mycological Society Autumn Foray in Lincolnshire in 1986. It must be stressed that as the fungi were the main quarry these are merely casual records made by myself and Dr Brian Spooner of RBG Kew. A more single-minded approach would doubtless have turned up considerably more species. It is in the hope that naturalists resident in the county may be encouraged to take up the study of these intriguing organisms that this list is published here.

Little work on plant galls in the county appears to have been undertaken in Lincolnshire since the pioneering work of Miss S C Stow in the early part of this century (Stow, 1907, 1910, 1915). Twenty or so of the species recorded in 1986 appear to be additions to the Lincolnshire list, but as there is sometimes confusion regarding the nomenclature of past records (and sometimes of present-day ones also!) and because a thorough search of published sources has not been possible, these additions are not indicated here.

There is tremendous scope for anyone inspired to take on the study of plant galls. A national society has recently been set up to serve as a focus for the increasing interest being shown in the subject and provisional keys to several hundred of the most frequently encountered species have been published (Stubbs, 1986). The inter-disciplinary nature of the subject means that naturalists with varied interests - as botanists, entomologists, mycologists, microscopists, photographers etc - all can play an important role; there is still much to learn. The main basic requirement is a reasonably sound knowledge of the vascular plants, as the accurate identification of the host plant is a prerequisite for identification of the galling agent. Given this, the position of the gall on the plant and its shape, colour, texture etc. will, in a considerable number of instances, enable the observer confidently to name the gall causer in the field.

This is not the place for an account of the biology of plant galls except

to say that, put very simply, a gall represents an excessive growth of plant tissue which although made by the plant is stimulated by a living organism which is parasitic upon it. A fuller discussion of plant gall physiology and ecology will be found in the works mentioned in the bibliography. A perusal of the list which follows should indicate the wide variety of organisms which are capable of inducing such structures.

Key to Localities visited

(NB the 1 km square grid references given will generally be accurate but in a number of cases a record may well have been made in an adjacent square):

B.W.	Bourne Wood	(TF 0720)	11th September
F.W.	Fulsby Wood	(TF 2561)	12th September
G.C.	Grimsthorpe Castle	(TF 0321)	11th September
G.P.	Gibraltar Point	(TF 5658)	10th September
H.P.	Hartsholme Park	(SK 9469)	9th September
I.W.	Ivy Wood	(TF 1478)	10th September
K.M.	Kirkby Moor	(TF 2261)	13th September
S.H.W.	St Helen's Wood	(TF 2559)	12th September
T.F.	Twyford Forest	(SK 9523)	9th September
W.S.	Woodhall Spa	(TF 1963)	13th September

Classified List

Bracken Pteridium aquilinum

gall-midge Dasineura filicina: F.W.; K.M.

Male Fern Dryopteris filix-mas

anthomyid fly Chirosia betuleti (see note 1): B.W.

Broad Buckler-fern D. dilatata

anthomyid fly Chirosia betuleti: B.W.; S.H.W.

Norway Spruce Picea excelsa

aphid Adelges abietis: S.H.W.

Creeping Buttercup Ranunculus repens

smut-fungus Entyloma microsporum: B.W.

smut-fungus Urocystis anemones: B.W.; T.F.

Sycamore Acer pseudoplatanus

mite Aceria pseudoplatani (see note 2): H.P.; S.H.W.

mite Eriophyes macrorhynchus aceribus: F.W.; H.P.

Field Maple A. campestre

mite Aceria eriobia: B.W.

mite Eriophyes macrochelus: B.W.

mite E. macrorhynchus cephalodes: B.W.; I.W.

Holly Ilex aquifolium

agromyzid fly Phytomyza ilicis: H.P.; Lincoln town centre

Meadowsweet Filipendula ulmaria

gall-midge Dasineura pustulans: B.W.; I.W.

gall-midge D. ulmariae: B.W.; I.W.; T.F.

Bramble Rubus fruitcosus agg.

bacterium Agrobacterium tumefaciens: F.W.

mite Eriophyes gibbosus: F.W.

gall-midge Dasineura plicatrix: I.W.

gall-midge Lasioptera rubi: K.M.

Field Rose Rosa arvensis

sawfly Blennocampa phyllocolpa (see note 3) B.W.

Dog Rose R. canina sensu lato

gall-midge Wachtliella rosarum (see note 4): K.M.

sawfly Blennocampa phyllocolpa: B.W.; K.M.

- gall-wasp "Sputnik gall" Diplolepis nervosus (see note 5): I.W.
Hawthorn Crataegus monogyna
mite Eriophyes goniothorax: B.W.; F.W.; G.P.; I.W.; K.M.
aphid Dysaphis ranunculi: I.W.
gall-midge Dasineura crataegi: B.W.
- Rowan Sorbus aucuparia
mite Eriophyes sorbi: K.M.
- Blackthorn Prunus spinosa
mite Eriophyes similis: B.W.; I.W.
- Rose-bay Epilobium angustifolium
gall-midge Dasineura kiefferiana: B.W.; G.P.; H.P.; I.W.; S.H.W.; T.F.
- Ground Elder Aegopodium podagraria
ascomycete fungus Protomyces macrosporus: Tumby Lane near S.H.W.
- Amphibious Bistort Polygonum amphibium
gall-midge Watchtliella persicariae: G.C.
- Stinging Nettle Urtica dioica
gall-midge "nettle-gnat" Dasineura urticae: G.C.; G.P.; H.P.; I.W.; S.H.W.; T.F.
- Elm Ulmus sp.
aphid "fig gall" Tetraneura ulmi: B.W.
- Silver Birch Betula pendula
gall-midge Anisostephus betulinus: W.S.
- Alder Alnus glutinosa
Actinomycete 'root nodules' Proactinomyces alni: F.W.
mite Eriophyes axillare: S.H.W.
mite E. brevitarsus: F.W.; G.C.; H.P.
mite E. laevis: G.C.; H.P.; S.H.W.; W.S.
- Hazel Corylus avellana:
mite Eriophyes avellana: B.W.; F.W.
- Beech Fagus sylvatica
mite Aceria nervisequa ssp. faginea (see note 6): T.F.
gall-midge Hartigiola annulipes: F.W.; H.P.; W.S.
- Common (Pedunculate) Oak Quercus robur
gall-midge Macrodiplosis volvens: K.M.
gall-wasp "oyster gall" Andricus anthracinus (see note 7); B.W.; K.M.; S.H.W.
gall-wasp "artichoke gall" A. fecundator: B.W.; K.M.
gall-wasp "cola-nut gall" A. lignicola: S.H.W.
gall-wasp "knopper gall" A. quercus-calicis: H.P.; K.M.; S.H.W.
gall-wasp "red pea gall" Cynips divisa: B.W.; H.P.; I.W.; K.M.; S.H.W.
gall-wasp "striped pea gall" C. longiventris: S.H.W.
Gall-wasp "cherry gall" C. quercus-folii: B.W.; H.P.; K.M.; S.H.W.
gall-wasp "smooth spangle gall" Neuroterus albipes: B.W.; F.W.; I.W.; K.M.
gall-wasp "silk-button gall" N. numismalis: B.W.; K.M.; W.S.
gall-wasp "common spangle gall" N. quercus-baccarum: B.W.; I.W.; K.M.; S.H.W.; W.S.
- Hybrid Poplar Populus x euramerica
ascomycete fungus Taphrina populina (see note 8): W.S.
- Crack Willow Salix fragilis
sawfly "red bean gall" Pontania proxima: G.C.
- Common Sallow Salix caprea
mite Aceria tetanothrix: B.W.; K.M.; T.F.; W.S.
gall-midge "rosette gall" Rhabdophaga rosaria: T.F.
- Grey Sallow S. cinerea
sawfly Pontania pedunculi: K.M.
- Sallow sp.
sawfly Pontania vesicator: K.M.

Ash Fraxinus excelsior

mite Eriophyes fraxinivorus: Lincoln town centre
 psyllid (jumping plant-louse) Psyllopsis fraxini: T.F.; W.S.
 gall-midge Dasineura fraxini: B.W.

Germander Speedwell Veronica chamaedrys

gall-midge Jaapiella veronicae: B.W.; F.W.; G.C.; G.P.; H.P.; K.M.;
 T.F.; W.S.

Hedge Woundwort Stachys sylvatica

gall-midge Wachtliella stachydis: W.S.

Ground Ivy Glechoma hederacea

rust-fungus Puccinia glechomatis: S.H.W.
 gall-midge Rondeniola bursaria: S.H.W.; T.F.; W.S.
 gall-wasp Liposthenes latreillei: S.H.W.

Wood Sage Teucrium scorodonia

rust fungus Puccinia annularis K.M.

Elder Sambucus nigra

mite Epitrimerus trilobus: F.W.

Coltsfoot Tussilago farfara

rust-fungus Puccinia poarum: B.W.

Creeping Thistle Cirsium arvense

tephritid (picture-winged fly) Urophora cardui: B.W.; T.F.

Field Sow-thistle Sonchus arvense

gall-midge Cystiphora sonchi: G.P.; T.F.

Hawkweed Hieracium vagum

tephritid (picture-winged fly) Noeeta pupillata: W.S.

Hawkweed H. umbellatum

gall-midge Aulacidea hieracii: K.M.

Notes

1. This gall is figured in Darlington (1968) in plates 21 and 22, but is erroneously called Chirosia parvicornis there; the latter forms a much smaller roll-gall with only a few pinnules affected.
2. This mite is almost certainly the same species as the eriophyes megalonyx of Darlington and many other texts.
3. This is a recent necessary name-change for a sawfly previously known as B. pusilla.
4. =Dasineura rosarum of the Diptera Check-list.
5. There are problems regarding the pea-galls on rose leaflets. Some works give the impression that smooth pea-galls can all be assigned to D. eglanteriae. Sadly this is not the case: while all spiked pea-galls are caused by D. nervosus there are also smooth-galled forms of this species which are indistinguishable from those of d. eglanteriae. Breeding out of the adults is necessary and, unfortunately, very often parasites will emerge rather than the hoped-for gall wasp!
6. This is the gall figured as 'Eriophyes macrorhynchus ferruginus' (sic) in Darlington (plate 151).
7. Figured as A. ostreus in Darlington (plate 188).
8. Figured as 'Ascomyces aureus' in Darlington (plaste 219-21).

References/Further Reading

Buhr, H (1965): Bestimmungstabellen der Gallen (Zoo-und Phytocecidien) an Pflanzen Mittel-und Nordeuropas. 2 vols. Gustav Fischer, Jena. Keys to

some 7,500 galls of Europe (incl. Britain); in German but very comprehensive and with a good bibliography.

- Darlington, A (1968; 2nd edition 1975): The Pocket Encyclopaedia of Plant Galls in Colour. Blandford Press. For a long time the standby of British amateurs interested in galls; only a representative selection is included but is generally well illustrated, often by colour photographs. Still useful.
- Docters van Leeuwen, W M (revised 1982) Gallenboek. Thieme, Zutphen. In Dutch but very useful. Keys to galls of the Netherlands, many of which also occur in Britain.
- Eady, R D & Quinlan, J (1963): Handbooks for the Identification of British Insects, Vol. VIII part 1(a). Royal Entomological Society (London). Keys to gall-wasps and their galls.
- Kloet, G S & Hincks, W D (1975): A Check List of British Insects, Part 5, Diptera (2nd ed.) RES (London).
- Mani, M S (1964): Ecology of Plant Galls. Junk, The Hague. Detailed account of biology and ecology.
- Stow, S C (1907): Lincolnshire Galled-Plants: in Transactions of the Lincolnshire Naturalists' Union pp. 145-153.
- Stow, S C (1910a): Further notes on Lincolnshire Galled-Plants; in Trans. of LNU pp. 148-149.
- Stow, S C (1910b): Reports on galls in 'Field Meetings, 1909'; in Trans. of LNU pp. 150-151 and p. 157.
- Stow S C (1915): Lincolnshire Galled-Plants; in Trans. of LNU pp. 237-238.
- Stubbs F B (ed) (1986): Provisional Keys to British Plant Galls, British Plant Gall Society.

Details of membership of the British Plant Gall Society may be obtained from the Hon. Secretary. Dr C K Leach, School of Life Science, Leicester Polytechnic, Scraptoft Campus, Leicester. LE7 9SU.

SPARROWHAWK ATTACKING NOCTULE BATS

On the 29th September 1986 at 1600 hrs whilst observing a flight of Noctule bats (*Nyctalus noctula*) from a roost in a small copse at Ilam, Staffordshire our attention was drawn to a male Sparrowhawk (*Accipiter nisus*) flying at a distance of approximately 150 metres away from the bats. The bird flew out of sight and our observations reverted back to the Noctule bats.

Identification of the bats was confirmed by one of us (EW) and verified with Phil Richardson of the Northants Bat Group. Twelve bats were in flight, busily feeding at a height of approximately 20 metres over an area of 0.5 hectare of broadleaved trees and open water. After several minutes we again noticed a male Sparrowhawk, but this time the bird was flying towards the bats. Its initial method of attack seemed totally confused, making unsuccessful efforts at any one of the twelve bats. The bats very easily evaded the Sparrowhawk and continued flying and feeding and were not concerned about the presence of a predator amongst them. The Sparrowhawk then concentrated on one bat from the main group making repeated attempts at its capture. The hawk's attack always came from behind and up towards the bat. As soon as the prey was missed the bird rapidly turned back on itself and prepared for another assault. We were amazed how agile the Sparrowhawk was, particularly the speed with which it could, after a miss, re-position itself in a very short distance to re-attack. Sharp turns left and right with twists were observed, and it looped over backwards once. After seven unsuccessful efforts to obtain a Noctule bat as a prey item, the Sparrowhawk flew away and the bat continued feeding with

the rest of the group.

Observations were made through 10x and 8x binoculars, in good, clear evening light. The whole incident lasted approximately five minutes. Both the "Handbook of British Birds" and "Birds of the Western Palaearctic" refer to bats being taken by Sparrowhawks, the former mentions Pipistrelle as a specific prey item. Newton's major monograph on 'The Sparrowhawk' describes in detail several hunting techniques and makes reference to bats taken as a prey item. Our observations are clearly similar to the "tail chase" where the Sparrowhawk follows a bird from below and just behind, then swings up to seize the prey after a short burst of acceleration. However this encounter of the male Sparrowhawk and Noctule bats within a short distance of attacking space shows a very high level of concentration and perseverance by the bird of prey in its attempt to obtain a prey item; even though it did prove to be unsuccessful.

Peter Roworth, Croft Cottage, Ilam, Ashbourne, Derbyshire
Eric Wright, 'Foxhollow', Doddington Road, Whisby, Lincoln

NEW AND SCARCE SPECIES OF ODONATA: 1985-86

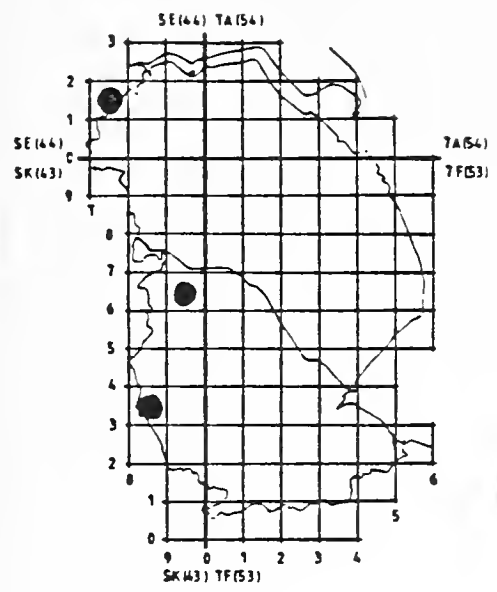
E J Redshaw

Steady progress continues to be made on the recording of dragonflies and damselflies in Lincolnshire and South Humberside, and the publication of three books on Odonata in 1986 has boosted the popularity of these interesting insects.

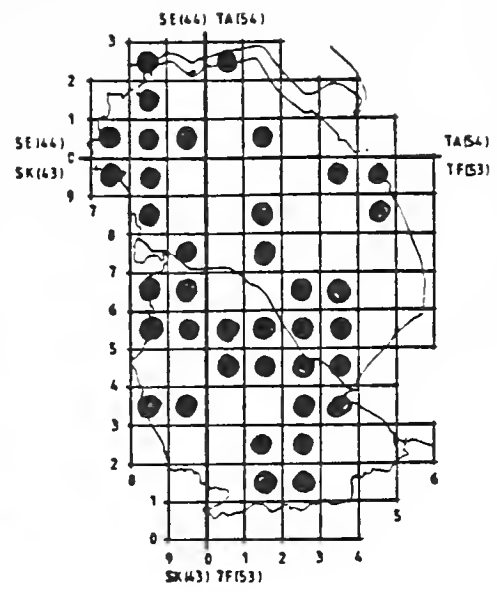
Following a general decline in the distribution of many species in the 1970's, due to a variety of causes ranging from the use of herbicides on emergent vegetation, the drought of 1976, and possibly other climatic changes, there was a considerable improvement in the status of several species during 1985-86.

Most notable was the first county record, by K Atkin, of Orthetrum cancellatum, photographed by the River Witham at Cherry Willingham (TF 07) on 24th July 1985. This species had been expected to occur in South Lincolnshire for some time, as it is not uncommon along fenland drains in Cambridgeshire, north to Yaxley. During 1986 the species spread through Lincolnshire north to Messingham, and was recorded from several locations. Most records were of male insects, the largest number being 20 at Grimsthorpe Lake on 19th July 1986 (J Walker). O. cancellatum the Black-tailed Skimmer is easily observed as it slowly drifts out over still water, hovers, and then return to the same area of bare shore from which it started.

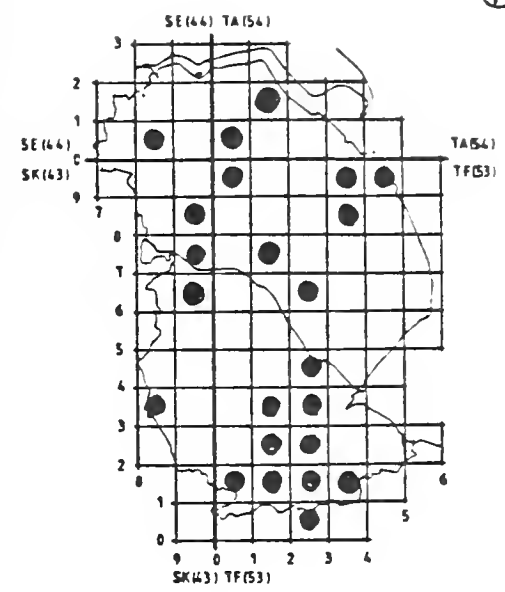
Other species of interest have included the first post 1960 record to Brachytron pratense the Hairy Dragonfly, a maximum of 5 insects being seen at Messingham Sand Quarries (SE 90) between 27th May and 24th June 1986 (V Wilkin). This species has also been reported in good numbers from a site in South Yorkshire. Erythromma najas the Red-eyed Damselfly re-appeared in good numbers along the Grantham Canal between Muston and Stenwith (SK 83) on 24th July 1986 (S & E Eyre), where P J Wilson recorded it in the 1950's. This species has also been reported from Swanholme Lake near Lincoln where there is an exceptionally rich dragonfly fauna. Its only other location in Lincolnshire and South Humberside is at Crowle. Calopteryx splendens the Branded Demoiselle appears to be recovering along the River Witham between Grantham and Lincoln, but has not been seen at Baston Fen NR since 1976. Sympetrum sanguineum the Ruddy Darter was formerly quite scarce in the two counties, but has now extended its range by



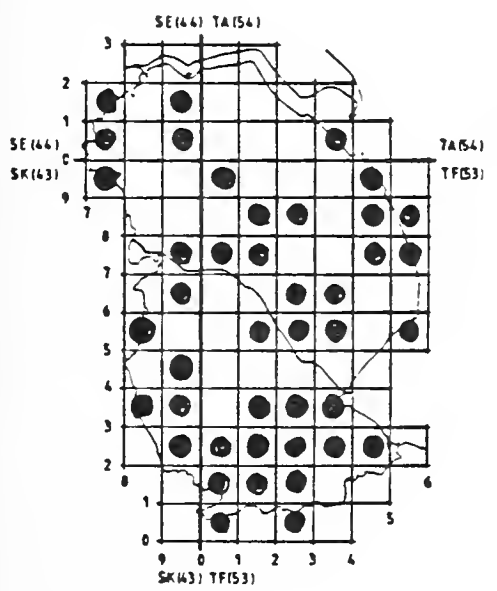
Erythromma najas



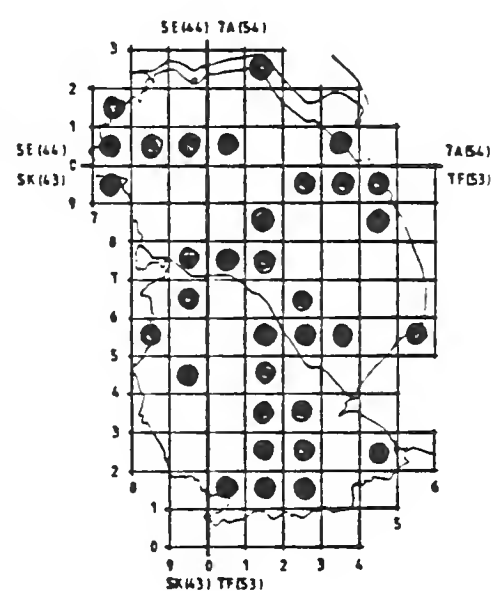
Coenagrion puella



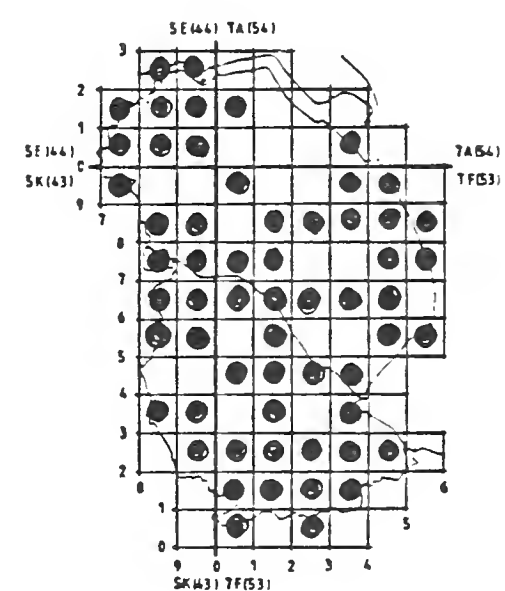
Coenagrion pulchellum



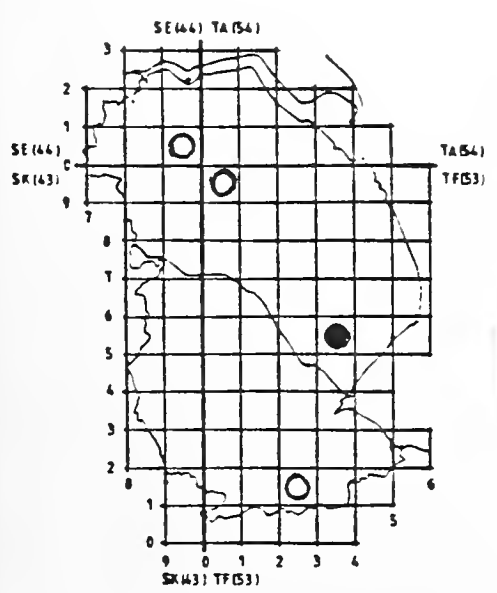
Enallagma cyathigerum



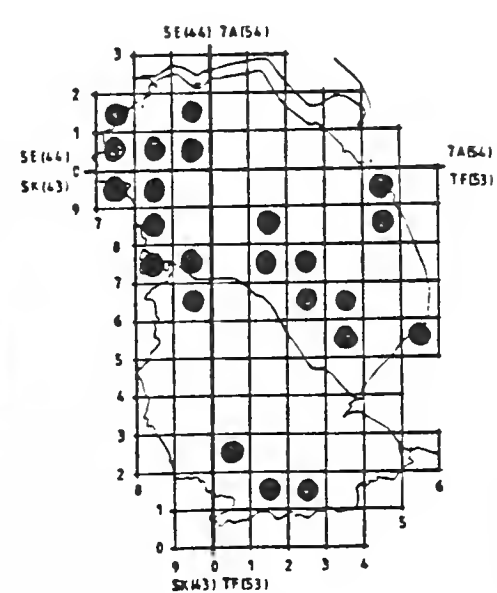
Pyrrhosoma nymphula



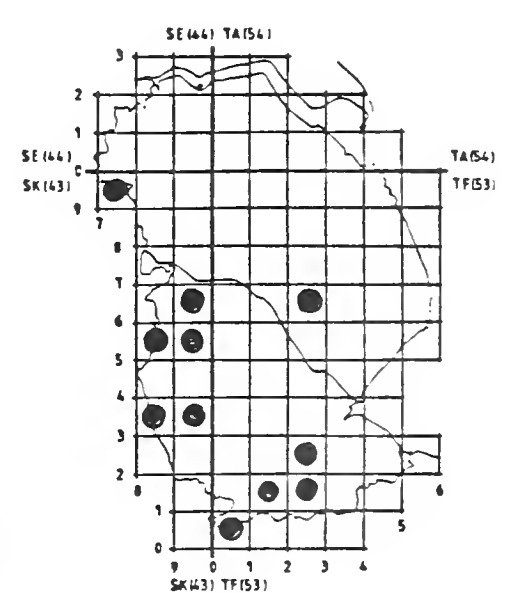
Ischnura elegans



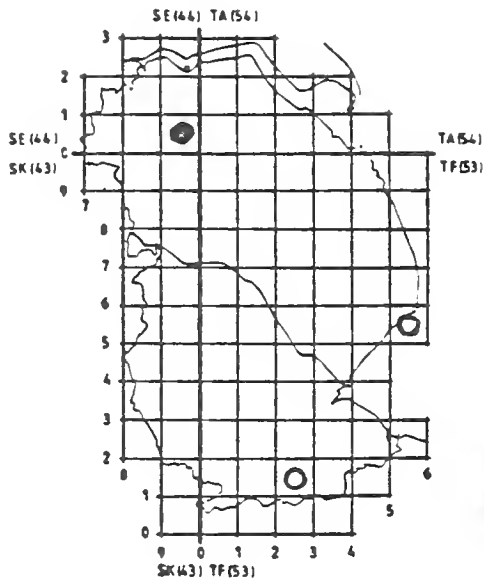
Lestes dryas



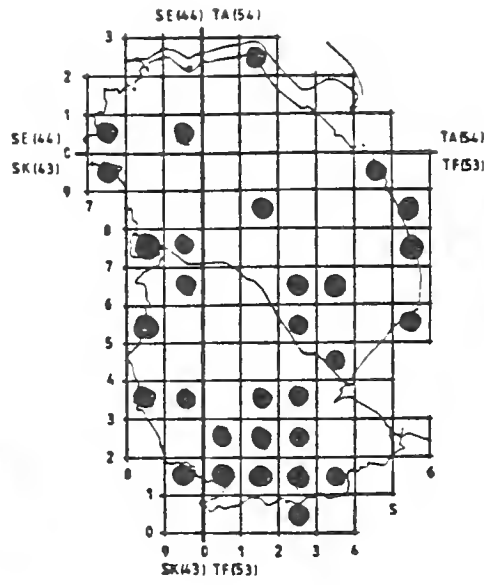
Lestes sponsa



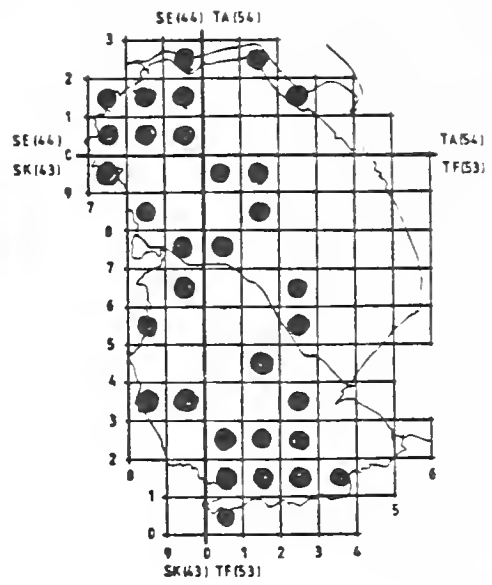
Calopteryx splendens



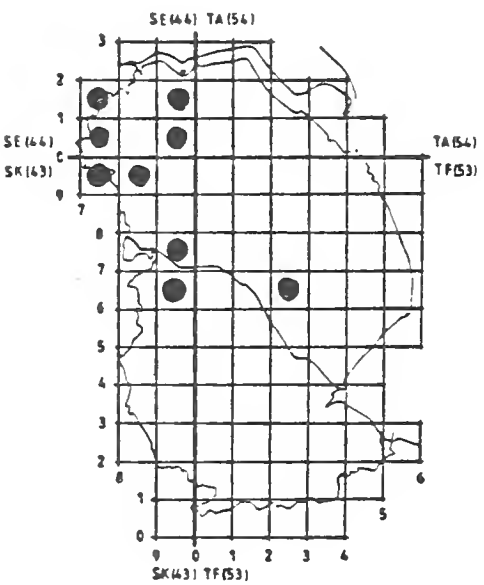
Brachytron pratense



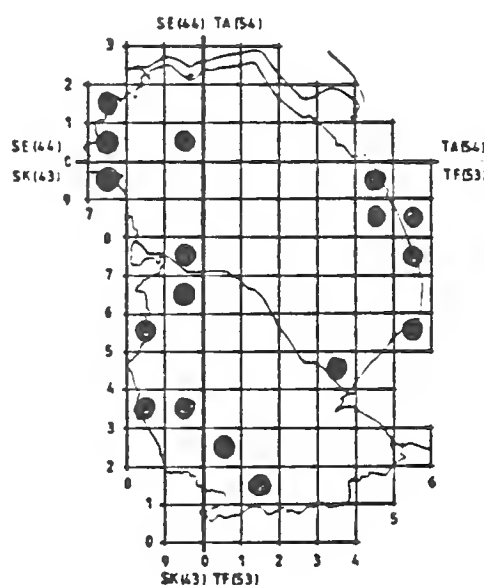
Aeshna cyanea



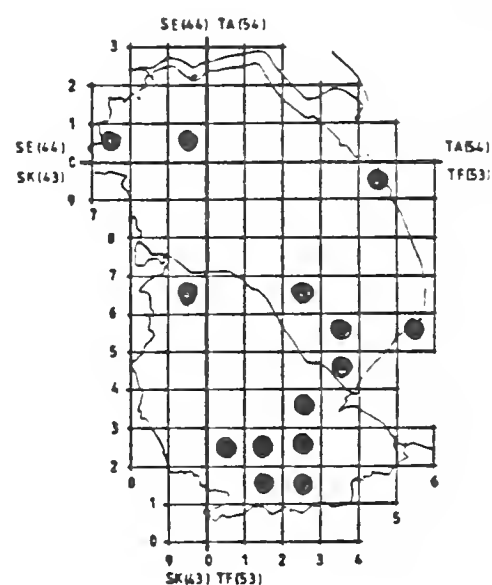
Aeshna grandis



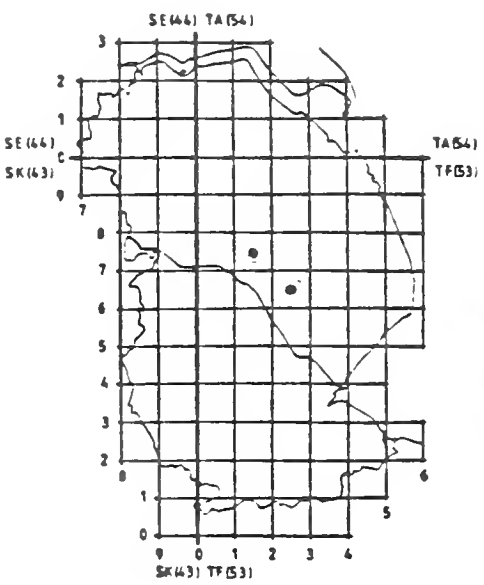
Aeshna juncea



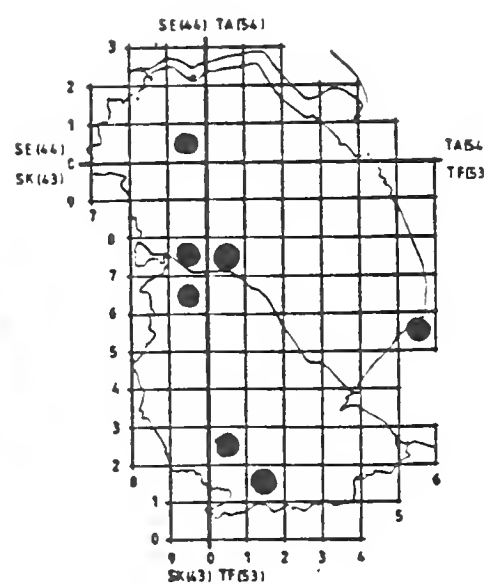
Aeshna mixta



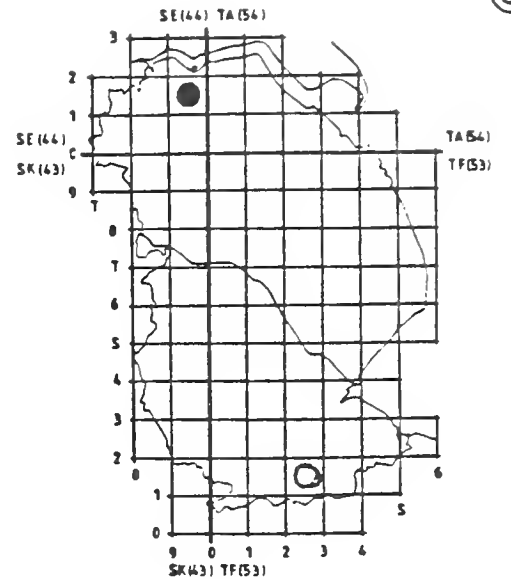
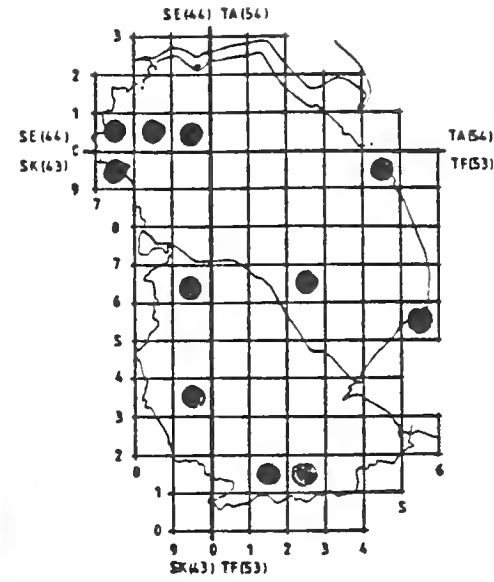
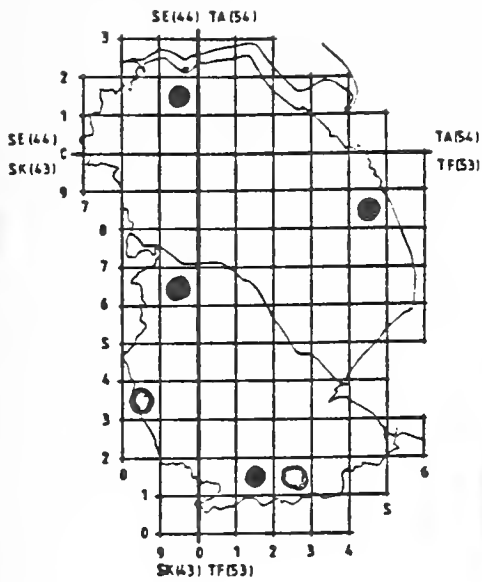
Anax imperator



Cordulegaster boltonii



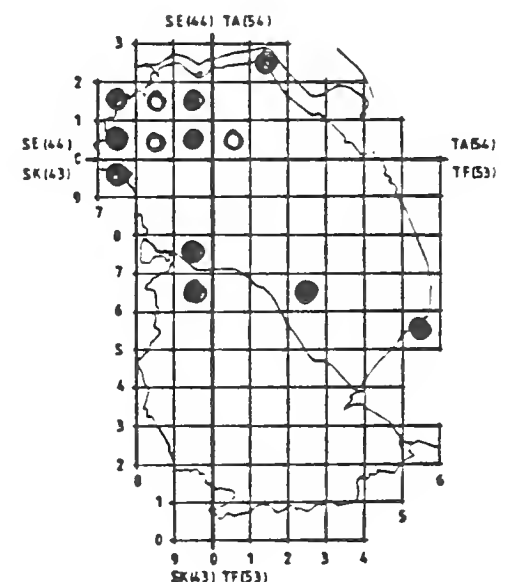
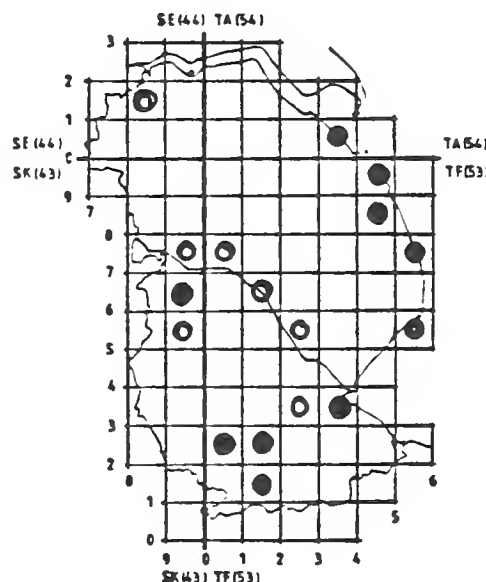
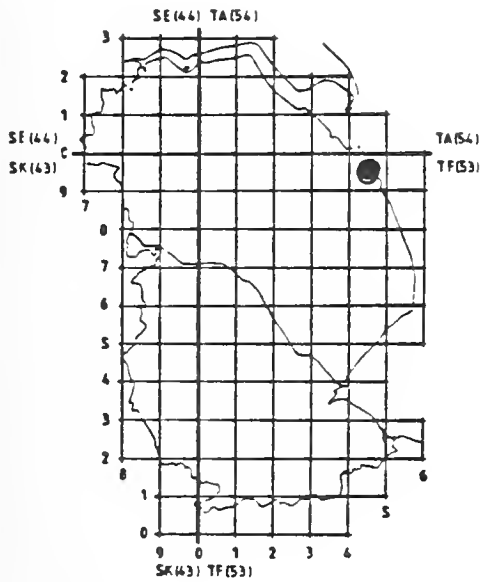
Orthetrum cancellatum



Libellula depressa

Libellula quadrimaculata

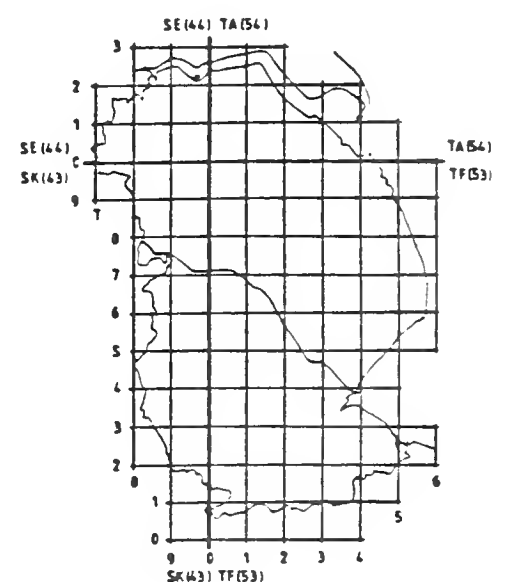
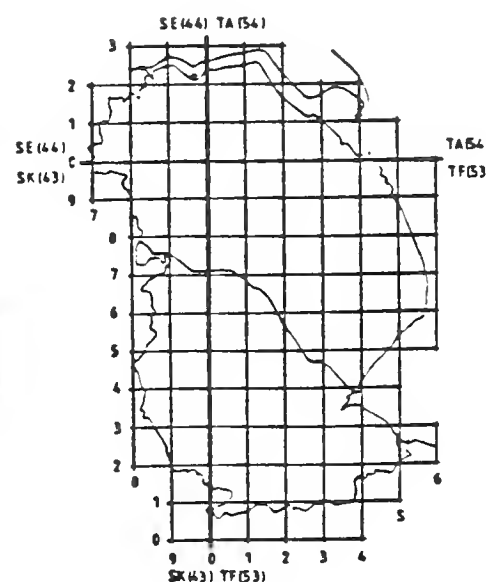
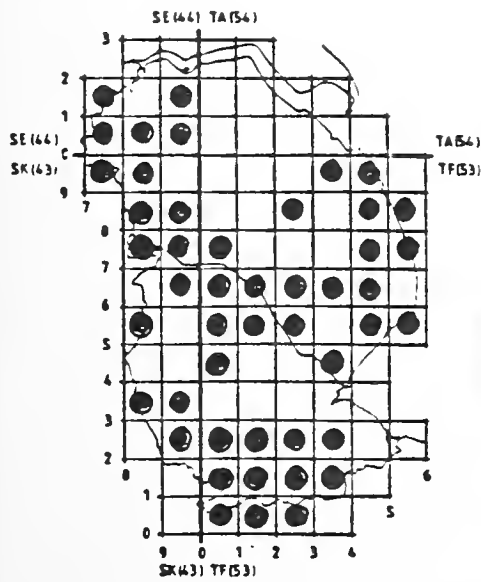
Sympetrum flaveolum



Sympetrum nigrescens

Sympetrum sanguineum

Sympetrum danae



Sympetrum striolatum

occupying coastal dune slacks and brackish and freshwater creeks between Saltfleetby and Kirton. Prior to the 1960's its main strongholds were the washlands in the south of the County, and along the Witham fens from Lincoln to Langrick. Inland it now occurs at Swanholme Lake, Baston and Thurlby fens, and Grimsthorpe Park.

I am grateful to the following for providing records:-

K Atkin, E Blood, Drs T Coles and C Extence (Anglian Water), S & E Eyre, R Fox, N Goom, A Goodall, R Lambert, J Ostler and T Smith (NCC), B Redman, D Smallshire, M Snow, J Walker, G Weaver (NCC) and V Wilkin, and to R Merritt (National Recorder) for his comments on the acceptability of new records. An additional two new county species are awaiting verification.

Reference:

Chapman B L & Wilson P J (1983) A Study of Lincolnshire Dragonflies. Trans. LNU XX.4. 169

Orthetrum cancellatum records:

River Witham, Cherry Willingham	TF 07	KA	24.7.1985
Grimsthorpe Lake	TF 02	JW/KA	19.7.1986
Bourne South Fen (R Glen)	TF 11	EJR	25.6.1986
Baston Fen NR	TF 11	EJR	20.7.1986
Gibraltar Point NNR	TF 55	EJR	15.7.1986
Messingham Sand Quarries Nr	SE 90	VW	13.7.1986
Whisby Gravel Pits	SK 96	RF	1986
Burton Gravel Pits	SK 97	RF	1986

The post 1960 distributions of dragonflies and damselflies are shown on the 10 km grid square maps. Also shown is a map with the number of species so far recorded in each 10 km square, and which highlights the further need for recording and also the popular areas centred round productive nature reserves.

OBITUARY

Sir Peter Kent D SC, Ph D, FRS, FGS

With the untimely death of Peter Kent in July last year, at the age of 73, we lost one of the outstanding contributors to our knowledge of the geology of Lincolnshire. He was co-author with Professor Swinnerton of The Geology of Lincolnshire published by the Union in 1949. This was not only the standard work but became a collector's item until a second edition with his revisions and additions was published in 1976. When he was awarded a Gold Royal Medal by the Royal Society in 1971, a rarity for a geologist, he was described as 'one of the outstanding applied geologists of our time'.

After achieving a first class honours degree at Nottingham University and undertaking research on the stratigraphy of English Mesozoic rocks, he joined the D'Arcy Exploration Company (later British Petroleum) in 1936, working on the UK exploration programme. After five years in the RAFVR as aerial photography intelligence officer relating to interpretation of enemy oil installations, where his competence resulted in a Mention in Despatches and the award of the Legion of Merit (USA) medal, he returned to BP. Most of his work took him abroad - linking surface geology and deeper structures through surveying and mapping in Iran, East Africa and Papua. Then followed work in Canada, and

in 1959 he became president of BP Exploration (Alaska) which led later to the discovery of the Prudhoe Bay oilfield, the largest in the USA, and for him the MacRobert Award. For several years he was technical and regional manager for BP's explorations in North and South America.

His other major contribution was concerned with North Sea exploration from 1966, when he was appointed Chief Geologist, and the discovery of the Forties oilfield. He was elected to the Royal Society in 1966, and served on its Council for two years. He retired as Head of Exploration in 1973, received his knighthood, and started a new career as Chairman of the Natural Environment Research Council. He served on several committees in Governmental science spheres, including preparation of the Dainton Report on the organisation of Civil Science.

He had the urge to publish factual data emerging from research so that it could be available for others. Of his list of published papers, about a hundred, 25 of them related to Lincolnshire - mainly about Jurassic stratigraphy and palaeontology and deeper structures of the county. The Geological Society of London awarded him the Bigsby Medal (1953) and the Murchison Medal (1969) for advancing geological science. He served as President of the Geological Society, of the Yorkshire Geological Society, and of the LNU (1969-70). His presidential address to the Union - 'Lincolnshire Geology in its Regional Setting' was an example of his aptitude for summarising geological information for a non-technical audience. From his home at West Bridgford he was able to maintain an interest in Lincolnshire geology, and his sound advice to note and record temporary geological exposures is continually relevant.

D N R

OBITUARY

George Leachman

At the time of his death George Leachman was Hon Programme Secretary of the LNU. We miss him greatly and cannot express our feelings better than by re-printing this obituary from "Lapwings", the newsletter of the Lincolnshire and South Humberside Trust for Nature Conservation, with the permission of its editor.

With the death of George Leachman in July, Lincolnshire naturalists lost one of their most respected and knowledgeable figures. He had lived in Lincoln all his life and was a popular 'local' at his butcher's shop in the Bail. Not only an outstanding and much-travelled ornithologist, he became a keen and active field botanist. Despite being colour-blind he was able to communicate the joy and enthusiasm of finds to friends, whether on a chilly mountain or knee-deep in mire. George was particularly fond of woodlands and for many years monitored birds and plants in local woods in his quiet and unassuming way, as well as travelling abroad 'birding with the lads'. Only this year he had enjoyed a safari holiday in Kenya with his wife Margaret. A long standing member of the Lincolnshire Naturalists' Union and of the Trust, he was always active in the field, enjoying wildlife to the end.

I W

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