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Polecats

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Lincolnshire natural history in 2008

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MOTHS AND MOTH RECORDING

Colin Smith

Moth records for Lincolnshire go back to the mid-1800s. Over the 150 years of recording a lot has changed and I will be exploring some of those changes and the usefulness of moth records and recording.

I have been collecting records myself since 1972 and know from my own experience that the effort put in and the methods used can have a greater effect on recording results than actual changes in moth populations.

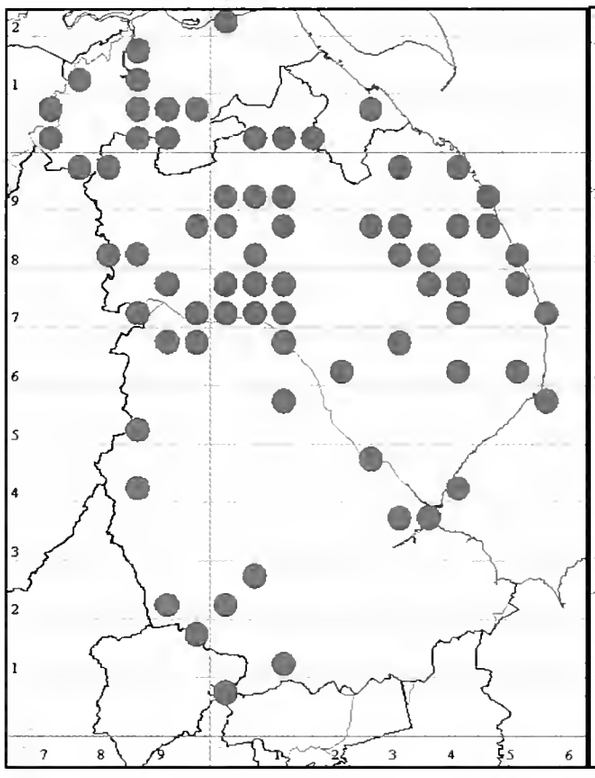
The most common and widespread method of finding moths is by light trapping using various types of electrical bulbs in combination with a container of some sort in which the moths are trapped, or standing by the light and catching the moths yourself. A trap can catch anything up to 2000 moths in a night and several hundred is quite normal on a summer night. There is a great deal of debate about what attracts moths to the light but from my observations it would appear that they hold moths that pass by it rather than attracting them. With most moths the male spends a lot of its time flying round looking for females and the females only fly to look for food and egg-laying sites. The result for the light trapper is that for most species, 75% of the moths they catch are males as they are so much more active on the wing. With a species like the heart and dart *Agrotis exclamationis* over 95% of those caught are males as the females have less need to fly as their larval food plants are varied and plentiful and are therefore easy to find. There are exceptions to this generalisation like the ghost swift *Hepialus humuli,* where the female seeks out the male and also lays her eggs whilst flying so is more likely to find her way to a light trap than the male who flies about lazily hoping his white wings are spotted by a female. The oak eggar *Lasiocampa quercus* takes it to the extreme, only the females are caught at light as the males only fly in daylight looking for females who themselves only fly at night to distribute their eggs. Some species are not affected by light at all and just fly past.

There are lots of other ways to find moths or record where they have been but most of these are little-used by the majority of recorders and all are much less productive. Beating, sweeping, searching, sifting and sugaring all have their rewards though and of the 850 species I recorded during 2008, 120 did not come to light (14%). This is directly mirrored in the number of records; of the 8400 records 1220 were not at light, again 14%. However, of the 7550 adult moths I recorded, only 365 were not at light, a mere 4%. Most people however only use a light trap and so do not record a proper representation of the moth population.

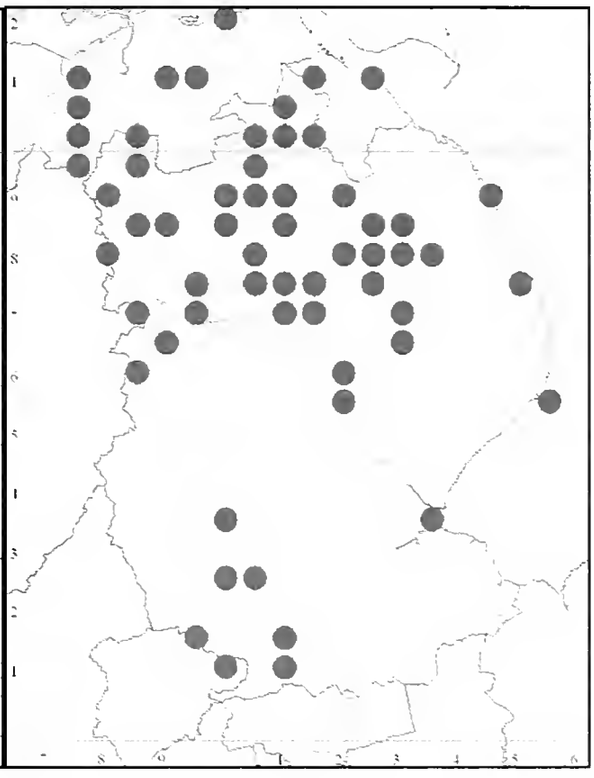
The other major factor in moth recording is the weather. The effect of the temperature on moth catches at light is so marked that the numbers caught may well be more use as a temperature gauge than a population indicator. Most moth recorders will tell you that a cool summer is bad for moths as they catch less in their gardens; I suspect that is not the case but just that the moths are less active and therefore less non-garden species find their way to the traps. This is often

made to appear worse because when the weather is less favourable most people do not trap as often. Overall, moth numbers are more likely to say more about the weather than the state of the moth population.

Large yellow underwing.
Distribution 2003-2008



Cocksfoot moth
Distribution 2003-2008

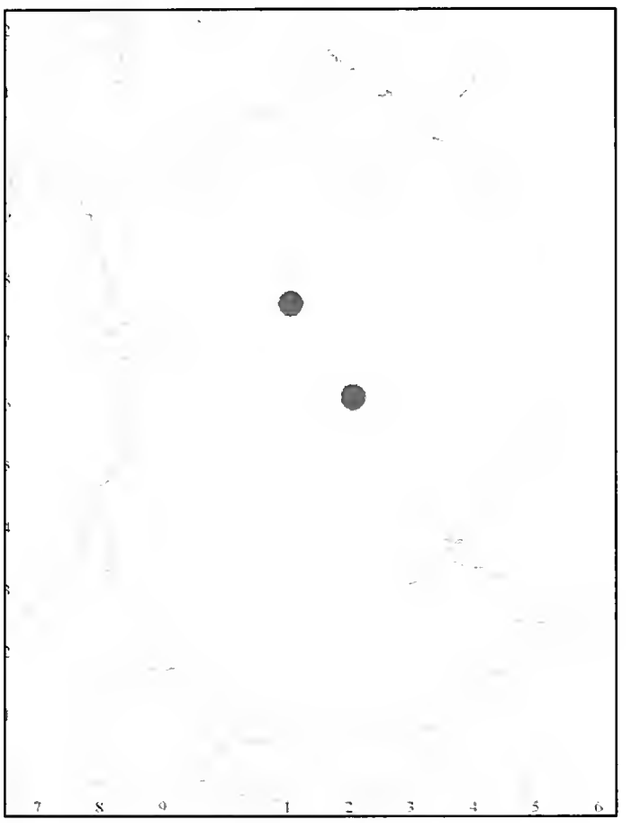


Finally we only have records where recorders have been. A map of large yellow underwing *Noctua pronuba* records will not show where they are but just where recorders have light-trapped, which will, for the large part, be where they live. The map of which 10km squares moths were recorded in says that we have far more recorders in the north of the county than in the south. Similarly a map of cocksfoot moth *Anthophila fabriciana* records will show where only a couple of recorders have been looking as they are very small and seldom come to light traps. Both species will without doubt occur in every 10km square in Lincolnshire so a map of their records is misleading as a representation of their distribution.

Let us look at some moth species and what our records tell us about them. The orange moth *Angerona prunaria* is a fairly large and conspicuous species so is not easily overlooked. A map of its distribution using records from the last 30 years shows that it is a very local species (2x10km squares). Its records appear to give a good representation of the species in the county. In other parts of the country it is more widespread and as the caterpillars feed on various tree species including hawthorn and it is unclear why it is only found in a small area of Lincolnshire.

Another species that has been recorded nearby is the triangle *Heterogenea asella*, a much less conspicuous and smaller species that only flies very late into the night. We have four records for this moth, three in College Wood and one at

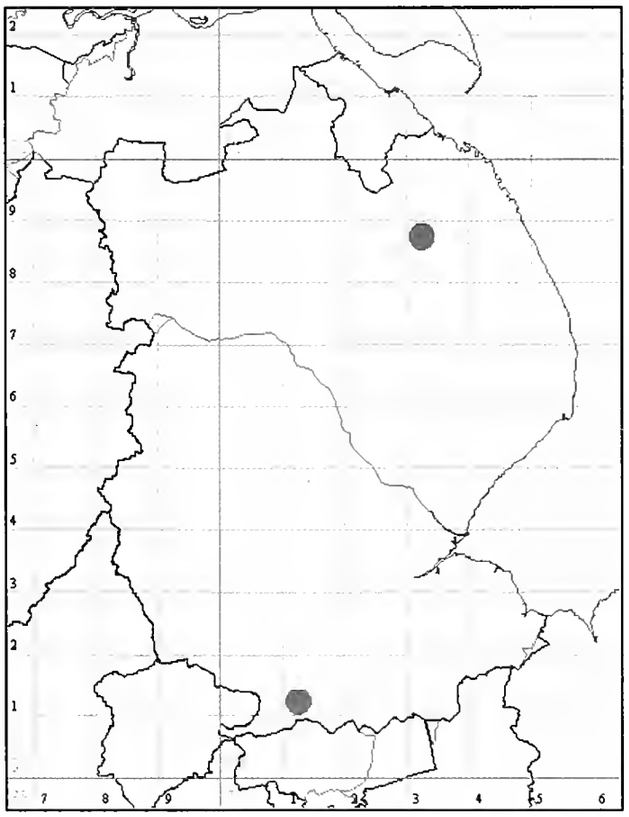
The triangle. Distribution 2003-3008



Kirkby Moor and consequently its distribution map looks similar to that of the previous species. The records again showing a local distribution for a species that feeds on oak or beech. This time however with a knowledge of the species and trapping methods it may be that the species has been overlooked or remained undiscovered in other woods and so may have a wider distribution.

The scarce silver lines *Bena bicolorana* is a pretty moth that can be found anywhere where there are oak trees. It has a short flight period that reduces its sightings but is fairly common. Its distribution map for the last six years shows that it is widespread and commonly seen.

The distribution map for scarce bordered straw *Helicoverpa armigera* looks fairly similar for records over the same period. This species is not at all common or widespread. Scarce bordered straw is a migrant species seldom getting as far north as Lincolnshire but in 2006 we had an invasion and all the records on the map are from that year.



There are some species for which we have very few records. One of these is the silver-striped hawk *Hippotion celerio*. In the last 100 years, only two individuals have been recorded, one in 1926 near Louth and the other in 2006 near Market Deeping.

Silver-striped hawk moth. Distribution 1908-2008

The silver-striped hawk is a rare migrant and the records probably give a good representation of its occurrence in the county. Yellow-legged clearwing *Synanthedon vespiformis* has very similar records; one was recorded near Caistor about 1908 and one at Whisby in 2008.

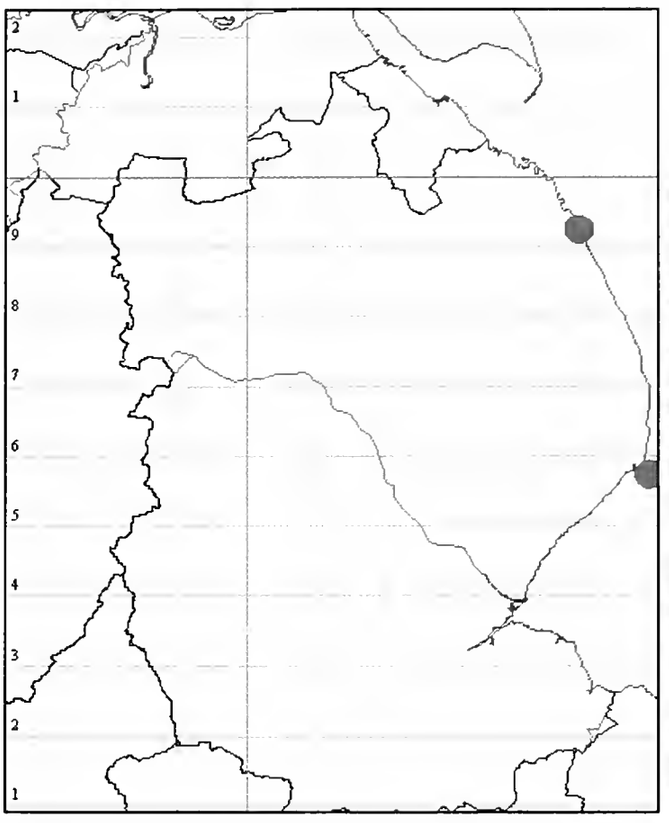
Yellow-legged clearwing however, is not a rare migrant. It is resident and will almost certainly have been breeding in the county in the intervening years. Its caterpillars live in oak stumps or broken branches tunnelling in the wood. The adults fly by day in the sunshine and look like a small wasp. The colony at Whisby is taking advantage of the oaks felled and pollarded by British Rail to keep the railway lines clear. There must be more colonies around but as yet we have been unable to find them anywhere else.

One way in which our records do seem to be useful is in the recording of new species colonising the county. Blair's shoulder-knot *Lithophane leautieri,* the caterpillar of which feeds on cypress, has taken advantage of our use of the tree in parks and gardens. The first record in Lincolnshire was in 1989 and there have been records every year since. A graph of the records for the species shows a quick establishment and steady population since. The last three years show a major increase which is more due to the fact that since 2005 I have been entering all records onto the database, not just the first record for a site as previously. A second graph with that factored out shows a more settled population. A similar exercise could be done for many of the micro species that would show the year of publication of the identification guide as the start of the records.

Noticing a new species for the county and following its progress is fairly easy but the decline of a species is less easy to spot until it gets to the point of disappearing. The lackey *Malacosoma neustria* used to be common across the county. I can remember catching several each night in their season and the webs of the gregarious caterpillars were easy to find but is now only common on the coast. You would not notice this from the distribution map of the last six years as there are still a few about inland, but when compared to the distribution over six years in the previous decade, the decline is very noticeable. In 1993 there were 19 records compared to 9 in 2003 and 28 records in 1994 compared to 11 in 2004. The fact that it is much more common on the coast is a fact that you will have to take my word for as there is very little recording done along the coast to show this conclusively from the records.

Another species that is reported as declining is the brown-spot pinion *Agrochola litura*. The distribution map for the last six years shows a reasonably healthy population and a graph of records does not show any significant change. The probable truth about this, like many other species, is that it used to be very common as it was not limited by its food (any herbaceous plant) when young and trees when older. Most people would report a sighting in their garden each year. The population has declined to a point where most recorders still find one most years but have noticed it missing occasionally. This does not show up in the records but, if the trend continues, records will drop off in the next few years.

The well known garden tiger moth *Arctia caja* has already reached this point and although very common ten or fifteen years ago there were only 3 records in 2007 and so far, 5 for 2008. The figure of eight *Diloba caeruleocephala* is another species that has declined. In 1978 I caught 21 individuals on six separate nights in my garden. During the six years 1993-1998 there are 21 records widely spread. For the six years 2003-2008 there are two records, both at Chambers Farm Wood which is now the only site I know of for the species.



Marsh moth.
Distribution 2003-2008 (Left)
Marsh moth (Below)
Photo M. Gray

While talking about moths under threat, the distribution map of records for the marsh moth *Athetis pallustris* over the last six years has just two spots. This is also the national distribution and for the last two years it has only been seen at a single site despite efforts to find it at the other two historic sites. We have had the only colonies in the country for many years and now despite efforts to protect the species it still seems to be declining.

Another interesting way of looking at the records is to check the species list for different sites. Assuming the trapping levels are similar, the higher the number of species, the better the biodiversity. Figure 1. shows some figures from several sites that I regularly monitor with mercury vapour light traps. The Glentham site is a large farmstead with trees and gardens surrounded by arable fields, not really an ideal site. The Caenby site is a large reservoir with overgrown banks and two mature poplar trees and again surrounded by arable fields. The Market Rasen site is my small garden which adjoins other gardens and is not far from many species of mature trees. The Willingham Forest site is a large clearing in the middle of pine plantations planted on ancient heathland with an old orchard and a small river bordered by ancient willows and there are also many species of other deciduous trees. The College Wood site is one of the Bardney Limewoods with an array of trees crisscrossed with open coppiced rides and a rich flora. There is no power supply at this site so a generator is necessary and therefore visits to this site have been about a fifth in comparison to the other sites. As you can see, the species totals appear to be a good indicator of the biodiversity, the two sites isolated by a sea of farmland having half the species list of the Willingham Forest site. The species list in my garden is quite good and will be helped by being only a mile from large areas of woods. I have put the results for College Wood in as it shows the difference it makes not making frequent visits and much less surveying activity during the less productive times of the year.

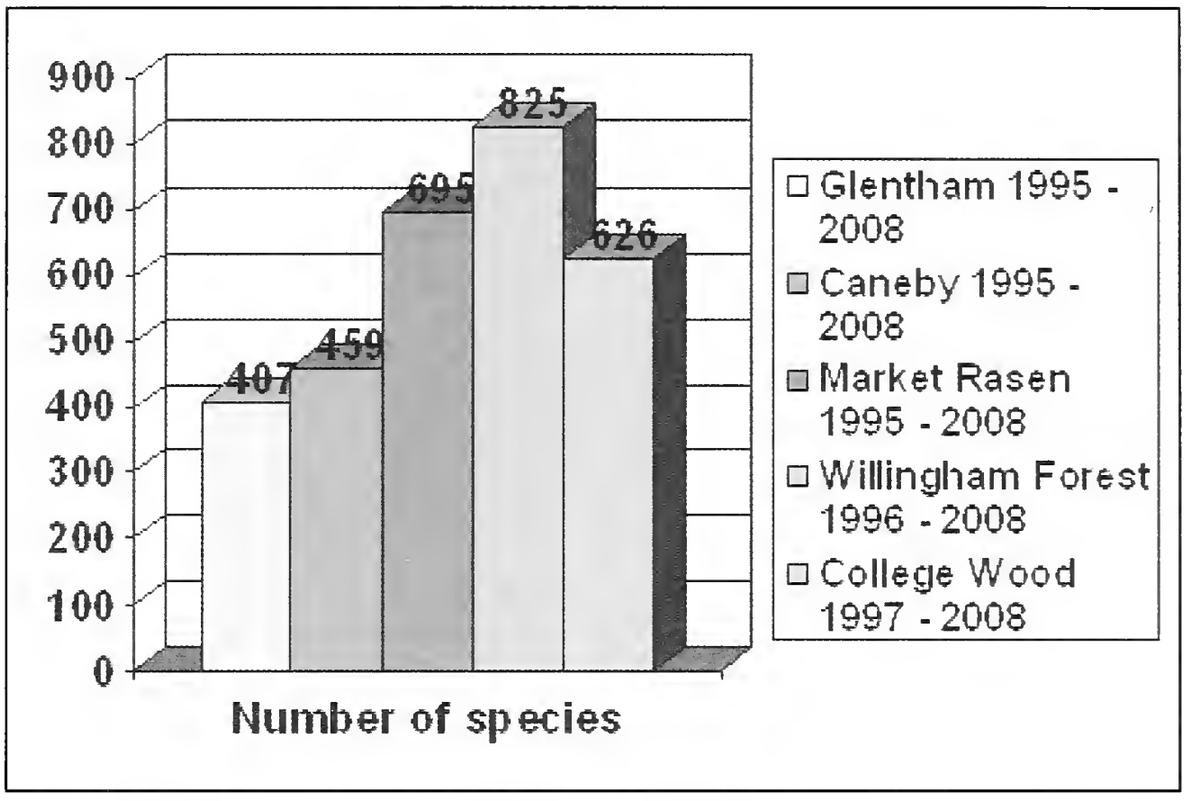
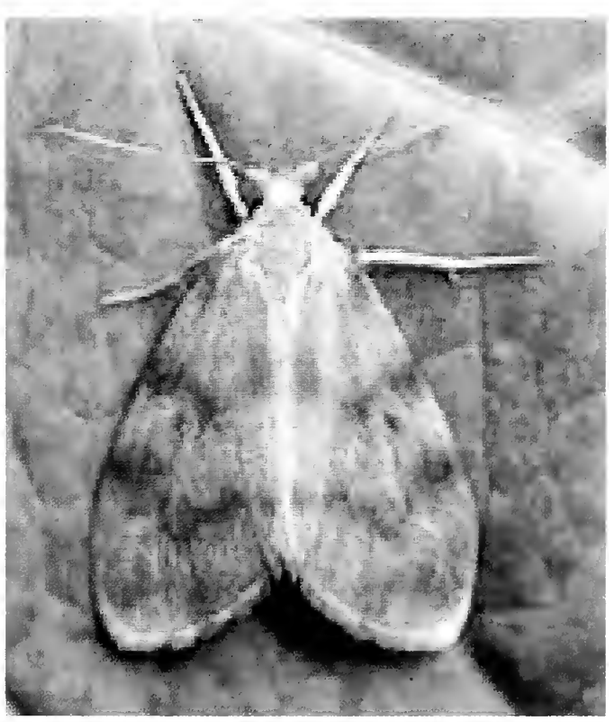


Figure 1. Number of species caught at study sites (Page 65)

Despite trapping at College Wood for eleven years there must still be a lot to find there. For interest, the species list for the five sites combined is 1000 and each has species recorded not seen at any of the others.



Muslin footman Photo David Painter, with permission from UKMoths

Some rather interesting records at these sites include muslin footman *Nudaria mundane,* a generally sedentary and local species whose caterpillars feed on lichens growing on trees, fence posts and walls. I caught two specimens on the same night in July 2001 at Glentham, the only record for the species during 17 years trapping. The appearance of two individuals would suggest a local breeding colony rather than the very unlikely coincidence of two arriving from elsewhere at the same time, but why have I not seen any before or since?

Another species that turned up out of the blue was a small waved umber *Horisme vitalbata,* the caterpillars of which feed on clematis of which there is none at the site. The only place it has been recorded recently is 50 miles away at Gibraltar Point. The most likely scenario is that it has arrived somewhere nearby on a bought clematis plant and found its way to my trap looking for a mate.

Great prominent Photo C. Smith

The great prominent *Peridea anceps,* whose host plant is oak, is common in the Limewoods south of Wragby but is not recorded in Willingham Woods to the north. The moth is on the wing in April and May, occasionally lingering on into June. It was therefore a great surprise when on the 18th June 2007 one turned up in Willingham Woods, out of place and out of season.

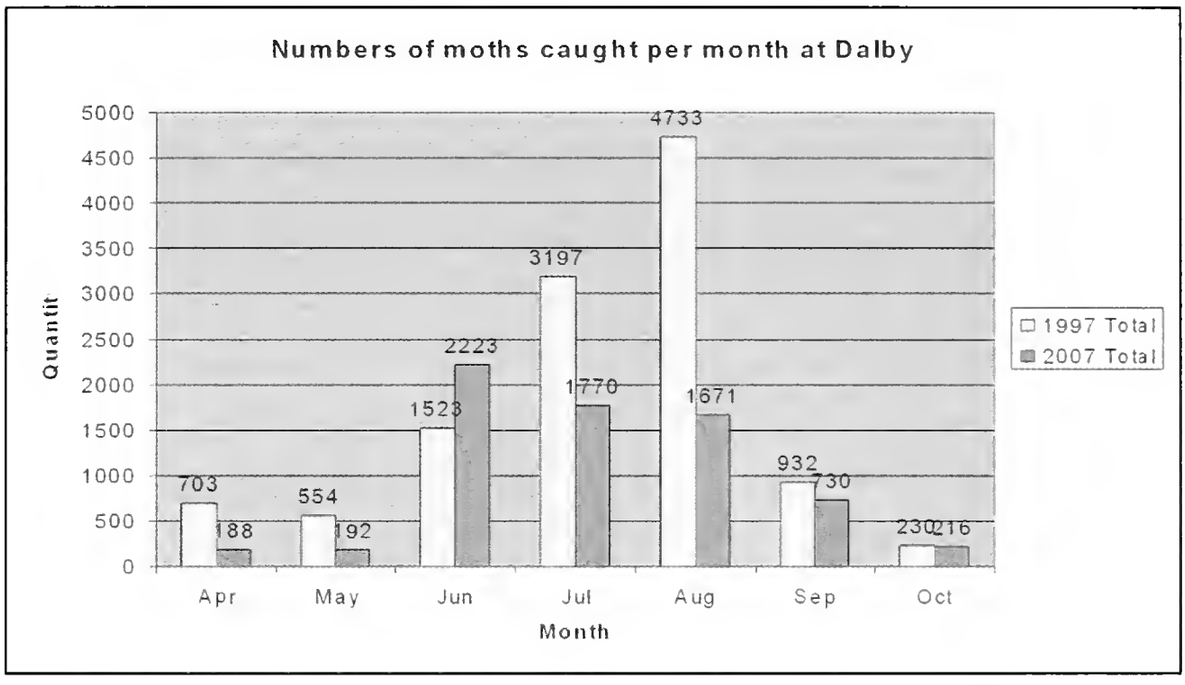
In May 2004 a grass rivulet *Perizoma albulata* turned up at my Willingham Forest site. A normally coastal species that is not a great traveller, it occasionally turns up at inland sites quite unexpectedly.

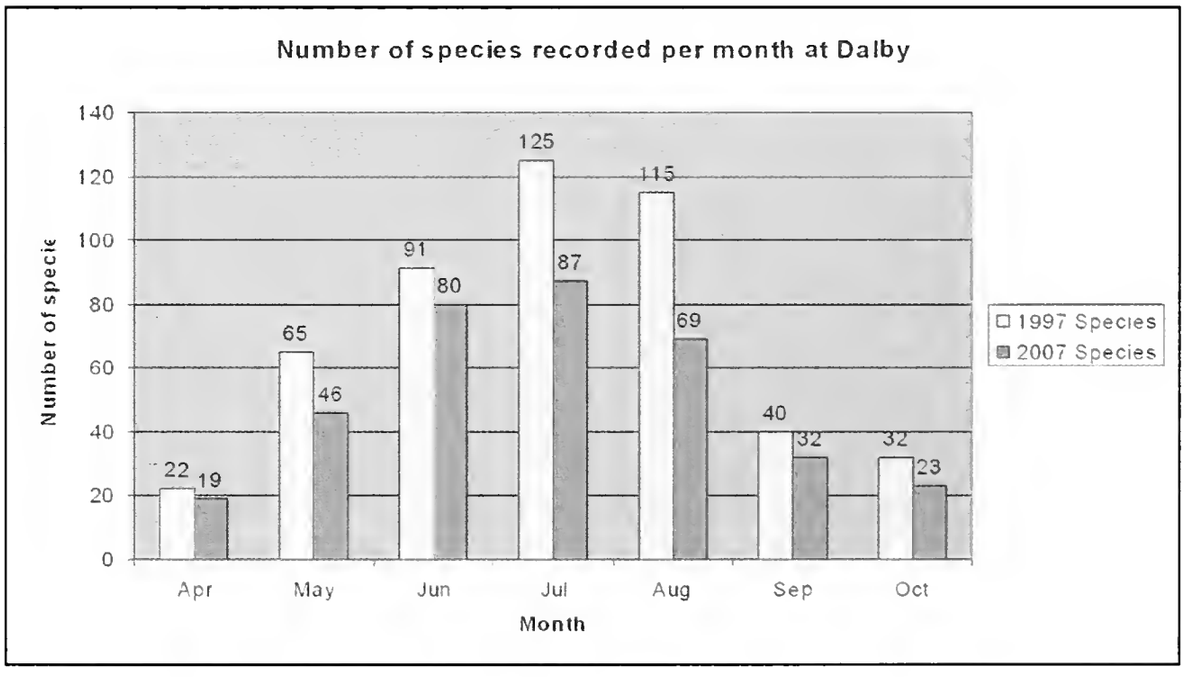
The bedstraw hawk *Hyles gallii* is normally only found in the county occasionally as a summer migrant but I have recorded them in Willingham Forest in the spring for three consecutive years from 2005, suggesting they have become resident somewhere near my trapping site. I did not see one last year but the weather was particularly bad last spring.

Bedstraw hawkmoth Photo C. Smith

There are lots of interesting micro moths but I will mention just two species; *Oecophora bractella* which is prolific in College Wood but nationally uncommon and not found in Lincolnshire outside the Limewoods, and *Thisanotia chrysonuchella* a single specimen of which was also found in College Wood, it being the second record for the county and the only one with full data.

To finish with I would like to put a local slant on the recent publicity about declining moth numbers. Beth Dawson has been recording moths for many years at Dalby in the Wolds which is not an especially good site for moths. She runs her moth trap every night during the spring, summer and autumn and counts all the macro species. From her records I have done a comparison between 1997 and 2007, two fairly similar mothing years a decade apart.





As you can see from the above graphs, the Lincolnshire moth populations do seem to have crashed in line with national trends both in terms of numbers and species. Allowance must be made for the possibility that the two years were not identical but a decline is still clear. Month on month 2007 is worse apart from June when total numbers were better than 1997 (top graph) but there were still less species (bottom graph).

I have also shown a selection of more common species. Firstly very numerous ones: most have declined but the two that have increased have strong associations with agricultural crops and may have been affected by cropping in nearby fields. Another selection of less numerous species once again show mostly declining numbers but not all. Interestingly buff ermine *Spilosoma luteum* shows a strong increase. This is strange as it is a close relative of the garden tiger *Arctia caja* which, as already mentioned, has declined dramatically. The privet hawk *Sphinx ligustri* has also shown a marked increase and is a classic southern species thriving further north in the warmer climate.

So in conclusion, the Lincolnshire Naturalists' Union has about 200,000 moth records that can reveal a lot about the county's fauna but can also be very difficult to decipher without a good understanding of the individual species.

Presidential portrait – Colin Smith

Colin Smith was born in Leicestershire in 1957 and moved around a lot during his childhood. He became interested in natural history during that time, exploring the Wiltshire countryside on caravanning weekends. When his family settled in Market Rasen in 1972, Colin joined the school ornithology club and became a qualified bird ringer 3 years later after being tutored by Anne Goodall and Peter Wilson. It was also through school that Colin was introduced to mothing and he bought his first moth trap in 1973. For twenty years moth recording took second place to bird ringing until Colin met Rex Johnson the county moth recorder whose help and enthusiasm moved Colin into the realms of micro-moths and introduced him to the LNU. A few years later he hung up his ringing pliers for the last time to concentrate on moth recording and in 2004 took over from Rex as County Moth Recorder. Colin has also a keen interest in molluscs, beetles and bugs as well as a general interest in all invertebrates.

DIPTERA AT WHISBY NATURE PARK

Phil Porter

Hoverflies

Whisby Nature Park has a respectable hoverfly list with some notable species recorded including the first county records of *Neoascia interrupta* and *Platycheirus occultus* from the 1990s, but the recording effort had fallen away almost completely by 2007 beyond noting the occurrence of common distinctive species that could be identified in the field. During 2007 the flower-rich meadow of the Orchid Glade provided a spectacular record with the first Lincolnshire record of *Volucella inanis*, a very large and broad-bodied yellow and black species. At this time the same site had good numbers of the equally colourful but usually scarce *Helophilus trivittatus*. During that summer I had also seen a substantial, glossy, black hoverfly decorated with two large bright yellow spots on the abdomen which might have been *Pipiza fenestrata*, but unfortunately, I had nothing with which to catch it. During 2008 I put in more effort and recorded *Eristalinus sepulchralis*, *Melangyna umbellatarum, Cheilosia proxima, Dasysyrphus tricinctus, Pipiza noctiluca* and *Parhelophilus versicolor*, while Allan and Annette Binding found *Merodon equestris*, a new site record.

Merodon equestris.
Photo R. Key

Meanwhile the wasp mimic *Chrysotoxum festivum* was much more frequent than usual in the drier places. Two further new site records of species which are scarce in the county during 2008 were of the old woodland indicator *Ferdinandia cuprea* from a hedgerow at Grebe Lake, previously recorded in nearby Tunman Wood, and the highly distinctive *Leucozona glaucia* which is reasonably frequent in damp places in England but virtually absent from East Anglia and some eastern midland counties including Lincolnshire. It is nearly always found feeding on angelica flowers. Mid-summer onwards, when these species were recorded, is certainly a peak time for high numbers of hoverflies, but several of the less familiar species are only about earlier in the year and this is an opportunity which has never been exploited properly at Whisby, so if time can be made available the 'blackthorn period' could possibly get 2009 off to fine start with hoverflies.

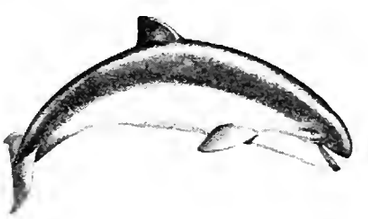
The larger Brachycera

Finally, we have noted the first site records of three of the aquatic soldier-flies which include species with particularly spectacular patterns and which are none-too-easy to come across. During 2007 and 2008, the least scarce of the typical

genus, the yellow and black *Stratiomys potamida* (Page 132), has occurred in each year, but 2008 also brought *Stratiomys singularior*, a much duller insect marked with off-white, which typically inhabits brackish ditches and so had possibly wandered from the tidal reaches of the Trent to get to Whisby. Both of these species are so broad in the abdomen that they are relatively clumsy, infrequent flyers. In 2008, the much smaller *Oxycera rara*, another vivid yellow and black jewel, was first photographed by Adrian Royle alongside the railway at Grebe Lake. There subsequently followed a sight record nearby and finally Allan Binding recorded a specimen from the Magpie Walk.

Oxycera rara Photo A. Royle

Terrestrial species in this family noted at Whisby during the last two years include the common bee-fly *Bombylius major*, and a small slender robber-fly *Leptogaster cylindrica* together with the ubiquitous horse-flies *Chrysops relictus* and *Haematopota pluvialis*. There remains a massive amount of recording to arrive at a sensible idea of the larger Brachycera present at Whisby. All of the specimens listed above have been checked by LNU recorders with the exception of the very common *Bombylius, Chrysops* and *Haematopota*.



THE SPINED LOACH IN LINCOLNSHIRE

Chris Randall

The spined loach *Cobitis taenia* (Figure 1) is probably Lincolnshire's, and perhaps the UK's, least well-known native fish, its cryptic behaviour and unusual diet both helping to keep from the gaze of ecologists and anglers. Amongst fishery managers it is probably slightly better known but only those in the East Midlands and Cambridgeshire are ever likely to have seen a living specimen. Many in the conservation world first heard of spined loach when it was listed in Annex II in the Habitats and Birds Directive as one of the species that required the UK to designate areas to ensure its protection. This also meant that for the first time effort was directed toward understanding the distribution, ecology and origins of the species. Its subsequent inclusion in local Biodiversity Action Plans has also done much to raise its profile.

Ecology

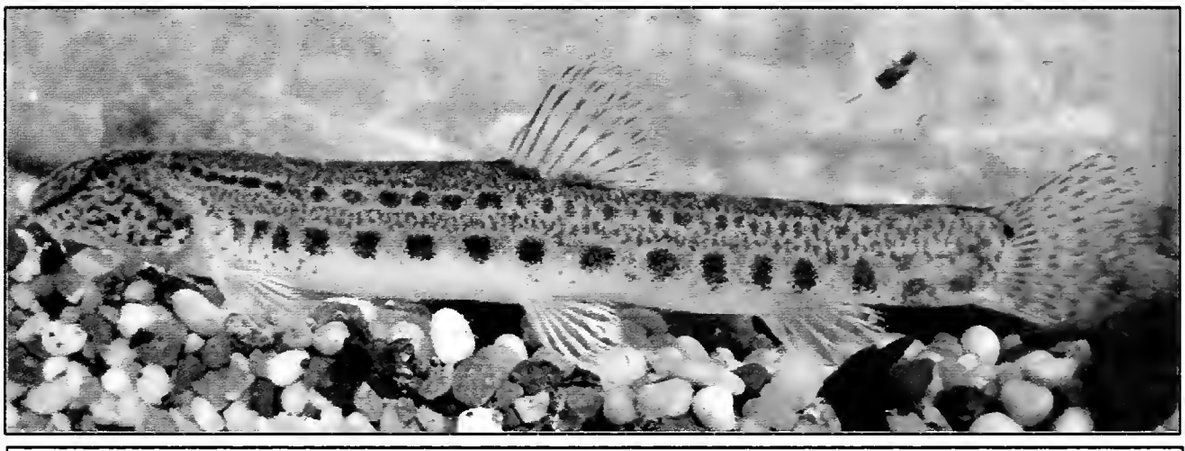


Figure 1. Spined loach. Photo Environment Agency

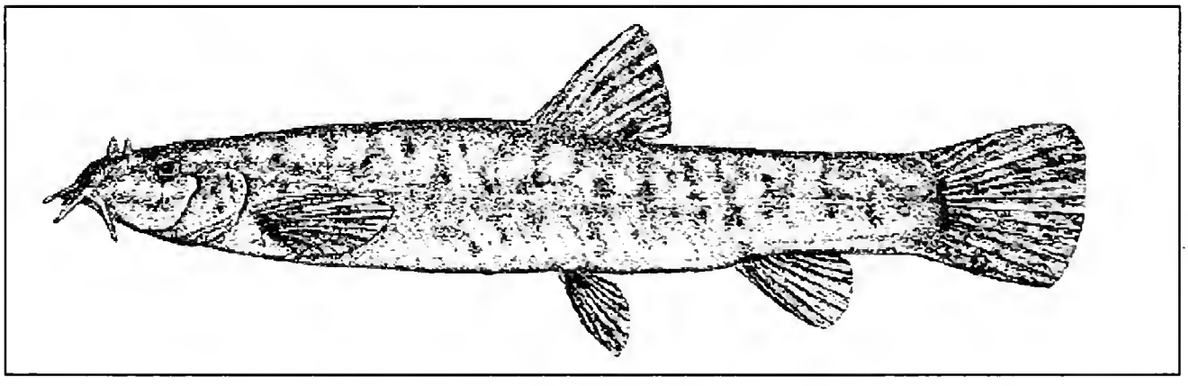


Figure 2. Stone loach (Page 72)
Figures reproduced from Maitland & Campbell (1992) with kind permission of Harper & Collins Publishers

The spined loach belongs to the family of loaches originating in near-Asia. It is distinguished from the more ubiquitous stone loach (Figure 2), found in the faster

flowing sections of Lincolnshire rivers, by its distinctive body patterning, the shape of its head and the indistinct barbels around the mouth. The spine in the name refers to a small spine just below the eye and is more easily felt than seen.

Spined loach generally reach between 5 and 10cm but have occasionally, in the case of females, been recorded up to 14cm. Males may be distinguished by a blade-like bony appendage on the pectoral fin which is thought to play a role in courtship. They feed on small invertebrates, mostly copepods and ostracods, from within the surface layer of loose silt or sand, sucking material into a specially adapted mouth cavity where edible particles are coated with mucous to separate them from the particles of silt.

They spend the majority of their time concealed within the bed of the river or amongst the layers of filamentous algae often found carpeting the bottom of slow moving waters. Although able to survive episodes of low oxygenation, they do favour areas with good levels of oxygenated water in this transitional zone between water and bed material. Although generally regarded as a native of rivers, the spined loach is also found in still waters such as gravel pits within the floodplain. In mainland Europe it has been found to make short migrations into connected waters to take advantage of spawning and feeding opportunities. Analysis of data from sites where they have been recorded indicates that they seem to favour areas with greater macrophyte complexity, probably as this allows the greatest feeding opportunities whilst still remaining in the shelter of the plants.

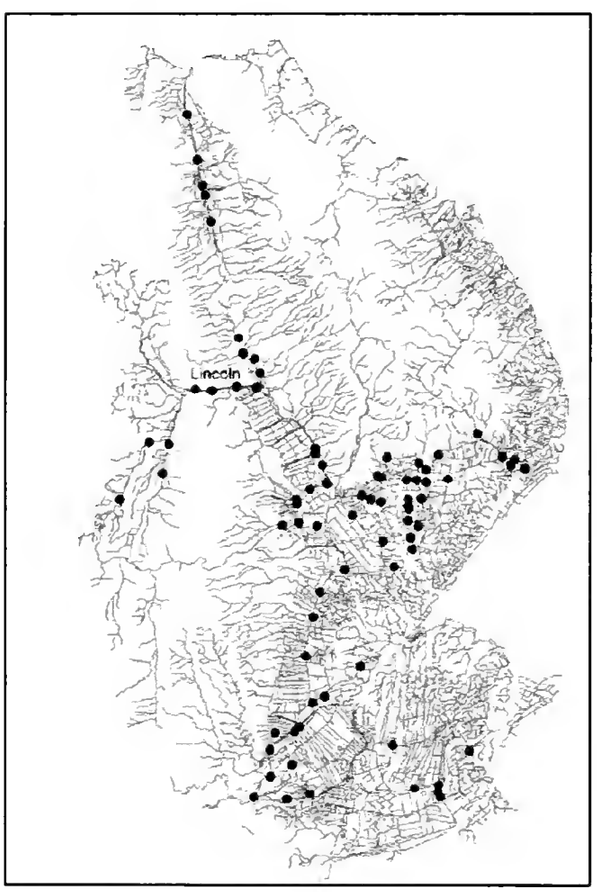


Figure 3. Records of Spined Loach in Lincolnshire since 2000. (Page 74)

They mate and spawn several times throughout a typical season, a strategy which buffers them against adverse environmental conditions such as falling water levels which could leave recently deposited eggs to dry out in the shallows. This habit also allows them to colonise recently flooded areas such as seasonally wet ditches and scrapes.

Origins

The spined loach is thought to have reached Lincolnshire following the recession of the last ice sheets. They colonised the rivers flowing into what has now become the North Sea shortly before sea levels rose, separating the UK and mainland European populations. Unlike many species of freshwater fish they

have not been spread around by man so their distribution has stayed similar to that found during the post-glacial period.

In Lincolnshire they are found in the Rivers Witham, Trent, Glen and Ancholme and also in the drains around Boston though there is some debate regarding the route by which the loach would have entered these various watercourses (Figure 3). Although present in the Trent system it is not found in the rivers to the north of the Humber and is only thought to have entered the River Ancholme via the transfer of water from the Witham via the public water supply pipeline at Short Ferry.

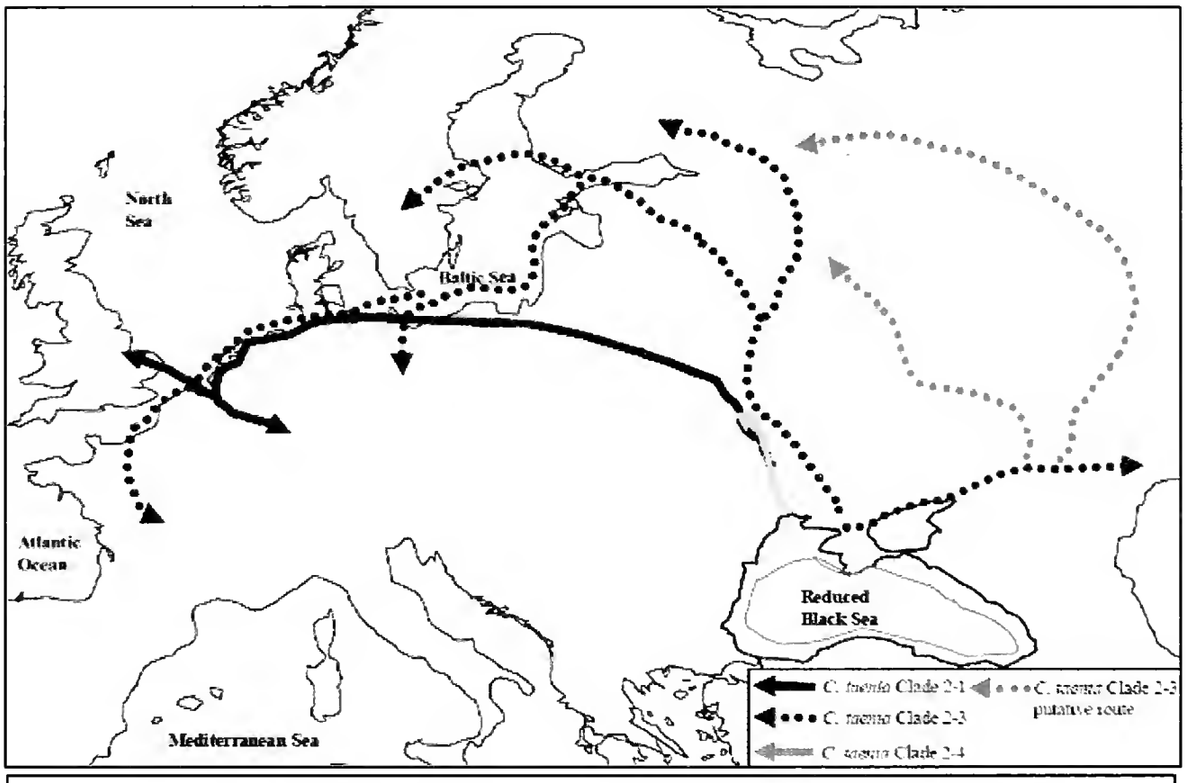


Figure 4. Possible inter-glacial colonisation routes for spined loach from the Ponto-Caspian area (Culling *et al.*, 2006)

Their absence rivers to the north of the Humber was thought to be due to conditions in the northern rivers being too cold for successful colonisation as they were sourced in the glaciers still covering Northern England but this does not explain the more recent findings linking the genetic phenotype of spined loach in the Witham to the Trent population.

An Environment Agency and English Nature project was able to track the migration of spined loach using genetic markers across Europe from near the Caspian Sea via a northerly route avoiding the Danube to the UK (Figure 4).The researchers found clear differences between the Witham/Trent population and the Welland/Nene fish just to the south, though all were part of the ultimate outpost of the post-glacial migration.

It is likely that seasonal overland flow between Trent and Witham allowed loach to move between the rivers and colonise new areas.

Threats

Studies funded by the Environment Agency and Natural England have demonstrated the resilience of spined loach to recurring but temporary habitat disturbance such as weed cutting or dredging. Although weed cutting in particular has been shown to remove quite high numbers of loach, there has been no identifiable impact upon the population in the areas where this has been tested. In fact, a certain level of regular cutting was seen as beneficial, probably by preventing weed growth from becoming too dense. By alternating the channel margin being cut each year it is possible to maintain an open channel to pass flows and at the same time leave an area of shelter for the fish without the vegetation becoming too dense.

Localised reductions in water level may have some impact upon numbers by exposing the loach to increased predation. They are potentially able to recolonise these areas provide sufficient habitat remains once water levels rise.

Perhaps the biggest threats to spined loach in Lincolnshire rivers are the potential for a trophic switch due to eutrophication (notably from elevated phosphate) and the risk from non-native benthic feeding fish.

Although phosphate levels in some watercourses remain above what is considered the safe limit for maintaining a diverse plant community, there is little, if any, evidence that a rapid switch toward a phytoplankton-dominated plant community is on the way. In fact, recent fisheries surveys have noted far greater growth of submerged macrophytes, which in some instances have reduced the efficiency with which the Environment Agency is able to sample fish populations.

Aggressive benthic feeding fish and carp in particular, could however pose a threat, particularly in light of the expected rise in temperatures over the next 50 years. Carp impact upon spined loach in two ways. Firstly, they are able to feed on the small loach even though they are buried in the silt, and secondly their feeding action damages or removes submerged macrophytes both by direct feeding and by shading from suspended sediment. This is not just a direct grazing effect. Their feeding behaviour also disturbs and puts in to suspension large volumes of sediment. This can affect water clarity to such an extent that the growth of macrophytes is inhibited.

Sampling for spined loach using a shrimp net. Photo V. Holt

Although numbers of carp in most watercourses are insufficient to impact upon either spined loach or macrophytes, carp have become established in the Little Holland Drain in south Lincolnshire where they have removed all submerged macrophytes and had a severe negative impact upon fish and invertebrates. The nearby Main Drain with very few carp has good numbers of spined loach whilst none are recorded from the Little Holland.

Outside the Little Holland system carp do not appear to have become established in sufficient numbers either through limited spawning opportunities or poor survival of fry through to maturity. The unlicensed introduction of carp for angling is always a risk as is the threat of escape from floodplain stillwaters.

At the current time there is very little work carried out to specifically monitor the status of spined loach other than the incidental records from routine fisheries surveys. This is due to the way the Environment Agency fisheries function is funded from rod-licence revenue but also reflects a general lack of interest by the conservation bodies in freshwater fisheries in the UK. Although the number of records for spined loach has risen since Peter Maitland published his maps in 1972 this can probably be attributed to better recording and a greater interest in the species.

Further research

With so little mixing of populations there are opportunities to study the genetics further to gain greater understanding of how they and other fish species came to colonise the east of Britain following the last glaciation.

We also need to look more closely at spined loach in the more 'upland' sections of our rivers and better understand the way they locate and make use of favourable habitat at a very small scale to ensure they continue to thrive because of, not in spite of how we manage our rivers.

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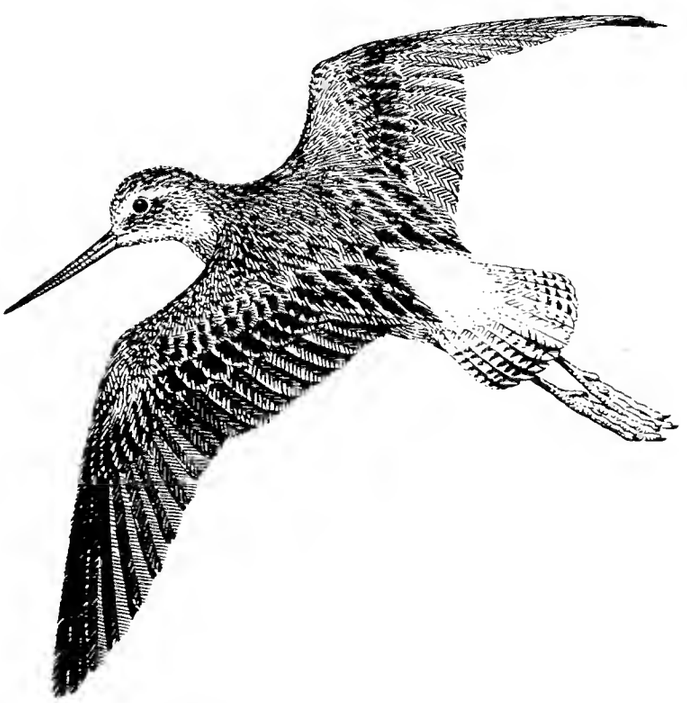

HAZEL DORMOUSE REINTRODUCTION IN LINCOLNSHIRE

Anne Goodall

The hazel dormouse *Muscardinus avellenarius* is the subject of a Natural England Species Recovery Programme (SRP), whose lead partner is the People's Trust for Endangered Species (ptes). At the time of the Programme's inception, this species was more or less confined to southern England and was considered to have very limited ability to spread. Since it has evolved to hibernate through the months when its food is not available, rather than to cache or store suitable items, there was a perceived risk that it might not survive the warmer winters expected with the changing climate. The SRP therefore undertook to identify areas with a good density of apparently suitable woodland in more

Dormouse adult. Photo A. Goodall

northern counties whose climate is likely to remain suitable for longer, and build up strong populations in these counties. The Bardney Limewoods NNR was selected as one of these areas, and in June 2002 the NNR Management Advisory Group was asked if it could undertake the introduction and subsequent monitoring of a new population.

Since the answer was both positive and very enthusiastic, just three weeks later 16 pairs of dormice arrived at 'Site A', and the rest, as they say, is history. Seven years on, the introduction is officially a success. Before the holding cages were opened, following a three-week acclimatisation period in their new surroundings, 180 dormouse nest boxes were erected throughout the release area, on a 20m grid pattern. Each year these boxes are checked by licensed volunteers monthly

between May and October; dormice found are sexed and weighed, litters are counted and their age is estimated. Since the 32 colonists were all PIT-tagged, each adult dormouse was also examined with a chip-reader for the first few years, but no chipped dormice have been found since 2004. For the first few years the mice continued to be found close to the release area. However, by 2005 it was noticeable that more were being found in boxes around the edges than in the centre of the release area and to check the suspicion that the mice had moved out of the release woodland, a further 80 boxes were erected in adjacent areas in early 2006. The monitoring checks that year confirmed the suspicion. Not only was a nest found over the parish boundary from the release site, confirming that they can and do come down to the ground to cross rides, but also, a litter was found in conifer plantation more than half a kilometre south-west of the broad-leaved woodland release area. As with just about every other release-monitoring team in the country, this taught us that dormice don't read books, or they would know that they shouldn't be doing either of these things!

Dormouse litter. Photo A. Goodall

In 2007 came proof that the mice can cross not just grassed tracks but hard-surfaced roads, and the exciting find of a 'wild' nest in brambles, again among conifers, several hundred yards to the east of any of the boxes. For 2008 therefore, although monitoring of the original boxes has continued, in order to provide standard data to ptes, the survey focus locally has moved to the use of tubes. These are placed mainly along hedges and in one case along a barbed wire fence, overgrown with bramble – where six of the nine tubes were used within weeks. Dormice are now being found in areas with neither hazel nor honeysuckle, normally considered to be essential habitat features for them, and the common factor in all the new locations is the presence of bramble. In the furthest tube out along the wire fence the resident had build a highly typical little dormouse nest – from carefully torn strips of paper handkerchief!

For 2009, the use of tubes will certainly continue, and we are now looking to put tubes along hedges leading out of the wood into the countryside. The really exciting news however is that, with ptes, we have been examining other Forestry Commission woodlands and have identified what will hopefully become 'Site B' in the next year or two, and even a 'Site C' perhaps a year or two beyond that.

THE BEES (HYMENOPTERA: ACULEATA) OF WATSONIAN LINCOLNSHIRE. Mining or Sweat Bees and their cleptoparasites, HALICTINAE.

Michael Archer

This is the fourth paper on the bees of Lincolnshire and deals with the bees of the subfamily Halictinae. An introduction to these bees can be gleaned from Nixon (1954), Andrewes (1968), O'Toole & Raw (1991), Weiss (2002) and Michener (2007). Else (in preparation), when published, will be the standard book on the British bees dealing with the natural history of each species in detail besides giving illustrated keys to all the species. The current major sources of species information are the Provisional Atlases of the Bees, Wasps and Ants Recording Society (BWARS). These provide a national distribution map and detailed natural history information for each species. These Atlases are not complete, but the relevant one will be indicated as each species is considered.

This paper considers 584 records of 30 species where a record represents a specimen differing in one of the following three variables: name, sex and day-date of capture or observation. These records were made by 22 recorders from 51 sites. The recorders were: M.E. Archer (MEA), H. Britten (HB), J.W. Carr (JWC), A. Faulkner (AF), C.F. George (CFG), A. Godfrey (AG), M.W. Graham (MWG), D.S. Hill (DSH), B.A. Hopkins (BAH), J. Hoyland (JH), P. Jones (HPJ), H.W. Kew (HWK), R.S. Key (RSK), A.S. Lazenby (ASL), E.A.W. Peacock (EAWP), A.L. Phillips (ALP), P. Porter (PP), Preston (P), S.P.M. Roberts (SPMR), A. Thornley (AT), R.W.J. Uffen (RWJU), P.K. Yeo (PKY). The sites with grid references and Natural Areas (Weaver, 1988) are given in the appendix. The sites are distributed among the Natural Areas as follows: North Lincolnshire Coversands & Clay Vale (23 sites), Lincolnshire Coast & Marshes (8), The Fens (6), Lincolnshire Wolds (5), Lincolnshire & Rutland Limestone (5) Trent Vale & Rises (2) and Urban (2).

For each species the records are given in site alphabetical order. Abbreviations are used for the following sites: Gibraltar Point (GP), Grantham (GR), Kirkby Moor (KM), Kirton-in-Lindsey (KL), Manton & Twigmoor (MT), Messingham Sand Quarry (MSQ), Old Bolingbroke (OB), Rauceby Warren (RAW), Risby Warren (RIW), Saltfleetby-Theddlethorpe Dunes (ST), Tattershall Sand Pits (TSP), Whisby Nature Park (WNP) and Woodall Spa (WS). The year of some of the records of M.W. Graham are not known so are given as 1941, the year in which these records were published. The records of C.F. George are given as pre-1889 and have been entered as 1888. The Red Data Book (Shirt, 1987) and National Notable or Scarce (Lists Na and Nb) (Falk, 1991) statuses with Archer National

Statuses (ANS) (Archer, 2002, 2007) are given, as appropriate, for each species. The Archer National Statuses updates the statuses of Shirt and Falk besides giving a status to each of the common and widespread species. The Very Rare ANS is equivalent to Red Data Book status, the Rare ANS to Na status and the Scarce ANS to Nb status. The ANS Universal, Widespread and Restricted statuses refers to the common and widespread species. Small size refers to species about 3-6mm in length, medium-size species about 6-10mm in length and large species over 10mm in length.

Of the 30 species on the Lincolnshire list, 9 species have a Universal status, 16 species a Widespread status, one species a Restricted status, three species a Scarce status (*Lasioglossum xanthropus, Sphecodes crassus*, *S. miniatus* but with no recent records of *S. miniatus*), and one species a Rare status (*Lasioglossum quadrinotatum*).

Subfamily **Halictinae**
Except for *Sphecodes,* usually subterranean-nesting bees with short, pointed tongues which may be solitary or eusocial. Except for *Sphecodes*, with pollen-carrying hairs on the hind femur and tibia. For solitary species, the female establishes a nest in the spring with the males and new females emerging in the summer. After mating the males die and the females over-winter as diapausing adults. Eusocial species rear two broods per year. The first of these is reared by the queen; afterwards, some workers remain in the nest to help the queen rear a second brood of males and new queens. *Sphecodes* species are cleptoparasites. Here, a female enters the cell of its host and destroys the host's egg. Then she lays an egg on the pollen ball. Nationally 60 species (4 species restricted to the Channel Islands) with 30 species in Lincolnshire.

Genus **Halictus** Latreille, 1804
Small to large bees. Cuticle of some species e.g. *H. rubicundus*, black but metallic bronzy-green for other species, e.g. *H. tumulorum*. Gastral terga often with posterior hair bands. Nest in aggregations. *H. rubicundus* and *H. tumulorum* may be solitary or eusocial. Nationally 8 species (2 species restricted to the Channel Islands) with 2 species in Lincolnshire.

Halictus rubicundus (Christ, 1791). Edwards & Broad, 2005. ANS Universal. 41 records. 17 April-29 September. Bradley Wood, 2006, ALP; Donna Nook, 2008, ALP; GP, 1989, 1990, 1991, 1992, 1993, 1996, MEA, 1994, RWJ, 1994, PFY, 1996, SPMR; GR, 1942, HB; Irby upon Humber, 2007, ALP; KM, 1989, MEA; Kirton, 1951, BAH; Kirton Marsh, 1897, AT; KL, 1888, CFG; Mablethorpe, 1886, HWK; MSQ, 1988, 1994, 2000, MEA; OB, 1941, MWG; Pyewipe, 2007, ALP; RW, 2002, MEA; RIW, 1984, 1985, MEA; ST, 1984, 1985, 1986, MEA; Scotton Common, 2008, ALP; Skegness, 1900, JWC; WNP, 2008, PP.

Halictus tumulorum (Linn., 1758). ANS Universal. 38 records. 24 April-29 September. GP, 1989, DSH, 1990, 1991, 1992, 1993, 1994, 1995, 1996, MEA, 1994, RWJU; Irby Dales, 2008, ALP; KM, 1990, 1997, MEA; MSQ, 1992, 2000, MEA; OB, 1941, MWG; RW, 1990, 1992, 1997, 2001, 2002, 2003, MEA; RIW, 1985, 1987, MEA; ST, 1995, 1996, MEA; TSP, 1995, AG; Welton-le-Wold, 2000, MEA; WNP, 2008, PP.

Genus **Lasioglossum** Curtis, 1833
Small to medium size bees. All species probably polylectic for pollen sources. Nationally 32 species (2 species restricted to the Channel Islands) with 17 species in Lincolnshire.

Subgenus *Lasioglossum* s. str.
Cuticle black. Nationally 8 species with 4 species in Lincolnshire.

Lasioglossum lativentre (Schenck, 1853). ANS Widespread. 8 records. 2 May-28 September. GR, 1951, HB; MSQ, 2001, MEA; Salmonby, 1946, 1948, MWG; WS, 1948, MWG.

Lasioglossum leucozonium (Schrank, 1781). ANS Widespread. 24 records. 24 April-17 September. Donna Nook, 2008, ALP; KM, 1997, 1999, MEA; MSQ, 1994, 1996, 1999, 2000, 2001, MEA; Moor Farm NR, 1989, MEA; RW, 2001, 2002, MEA; ST, 1996, MEA; TSP, 1995, AG; WS, 1948, MWG.

Lasioglossum quadrinotatum (Kirby, 1802). Na. ANS Rare. 4 records. 10-12 September. KL, 1888, CFG; Salmonby, 1948, MWG; WNP, 2008, PP; WS, 1948, MWG.

Lasioglossum xanthropus (Kirby, 1802). Edwards & Telfer, 2001, Nb, ANS Scarce. 1 record. 25 June. RW, 1993, MEA.

Subgenus *Evylaeus* Robertson, 1902. Cuticle black. Species solitary (*L. fulvicorne, L. nitidiusculum, L. rufitarse, L. villosulum*) and eusocial (*L. albipes, L calceatum,* although *L. calceatum* can also be solitary). Nationally 20 species (2 species restricted to the Channel Islands) with 9 species in Lincolnshire.

Lasioglossum albipes (Fabricius, 1781). ANS Universal. 17 records. 8 May-11 September. Hameringham, 1936, HPJ; KM, 1996, MEA; Mavis Enderby Valley SSSI, 1994, AG; MSQ, 1999, 2000, 2001, MEA; OB, 1941, MWG; Spridlington, 1994, AG; WNP, 1977, 2007, 2008, PP.

Lasioglossum calceatum (Scopoli, 1763). ANS Universal. 61 records, 1 May-29 September. Cadney, 1900, EAWP; Caistor Moor, 2008, ALP; GP, 1989, 1996, MEA, 1996, SPMR; GR, 1942, 1951, HB; KM, 1989, 1991, 1997, 1999, MEA; Kirton Marsh, 1897, AT; KL, 1888, CFG; Linwood Warren, 1900, EAWP, 1989, MEA; MT, 1988, 1990, MEA; Messingham Heath, 1989, MEA; MSQ, 1989, 1992, 1993, 1999, MEA; OB, 1941, MWG; Potterhanworth Wood, 1992, ASL; RW, 1999, 2001, 2003, MEA; RIW, 1984, 1985, 1986, 1987, MEA, 1987, RSK; ST, 1984, 1985, 1986, 1989, 1995, MEA; Scotton Common, 2008, ALP; Scunthorpe, 1901, P; Spalding, 1990, AF; Spridlington, 1994, AG; The Grange, Hackorn, 1984, AG; WNP, 2008, PP.

Lasioglossum fulvicorne (Kirby, 1802). Edwards & Broad, 2006. ANS Widespread, 1 record, 19 June, Welton-le-Wold, 2000, MEA.

Lasioglossum minutissimum (Kirby, 1802). ANS Widespread. 24 records. 1 May-11 September. GP, 1992, 1993, 1994, 1995, 1996, 1997, MEA, 1994, RWJU;

Hameringham, 1936, HPJ; Raithby, 1941, MWG; RW, 1991, 1992, 1994, 1999, 2001, 2002, MEA; TSP, 1994, 1995, AG; WNP, 2007, PP.

Lasioglossum nitidiusculum (Kirby, 1802). ANS Widespread. 16 records. 30 May-28 August. GP, 1991, 1995, MEA, 1994, PFY; GR, 1942, HB; KL, 1906, CFG; Linwood Warren, 1900, EAWP; MSQ, 2001, MEA; OB, 1941, MWG; RIW, 1984, MEA; ST, 1996, MEA; WNP, 2007, PP.

Lasioglossum parvulum (Schenck, 1853). ANS Widespread. 1 record. Blankney Fen, 1998, ASL.

Lasioglossum punctatissimum (Schenck, 1853). ANS Widespread. 5 records. 6 May-9 June. KL, 1888, CFG; MSQ, 1989, MEA; Nettleton, 1997, AG; RIW, 1984, MEA; WS, 1941, MWG.

Lasioglossum rufitarse (Zetterstedt, 1838). Edwards & Broad, 2005. ANS Widespread. 23 records. 1 May-11 September. Brumby Common, 1980, RSK; KM, 1996, MEA; Laughton Common, 1983, MEA; MT, 1988, 1989, 1900, MEA; MSQ, 1992, 1994, 1999, 2000, MEA; Nettleton Wood, 1997, AG; OB, 1941, MWG; Owlet Plantation NR, 2008, ALP; RW, 1999, MEA; RIW, 1987, MEA; Scotton Common, 2008, ALP; Tattershall Pits, 1994, AG; WNP, 2007, 2008, PP.

Lasioglossum villosulum (Kirby, 1802). Edwards & Broad, 2006. ANS Universal. 44 records. 3 May-16 September. GP, 1989, 1991, 1993, 1995, MEA, 1994, PFY; GR, 1942, 1943, HB; Hameringham, 1936, HPJ; Laughton Common, 1996, RWJU, 1996, AG; MSQ, 1988, 1989, 1996, 1999, 2000, 2001, MEA; OB, 1941, MWG; RW, 1991, 1992, 1993, 1994, 1997, 1999, 2001, 2002, MEA; RIW, 1984, MEA, 1985, RSK; ST, 1986, 1993, 1995, 1998, MEA; Scunthorpe, 1902, EAWP; WNP, 2008, PP.

Subgenus *Dialictus* Robertson, 1902
Cuticle bronzy-green or blue. Probably solitary, but some may be eusocial. Nationally 4 species with 4 species in Lincolnshire.

Lasioglossum cupromicans (Pérez, 1903). Edwards & Broad, 2005. ANS Universal. 24 records. 7 May-10 September. GR, 1942, HB; Raithby, 1949, MWG; RW, 1989, 1990, 1991, 1992, 2001, 2003, MEA, 1993, 1996, ASL; RIW, 1986, 1987, 1995, 2003, MEA; Salmonby, 1948, MWG; ST, 1995, 1998, MEA; WS, 1948, MWG.

Lasioglossum leucopus (Kirby, 1802). Edwards & Broad, 2005. ANS Universal. 30 records. 24 April-29 September. GP, 1990, 1991, 1992, 1996, 1997, MEA, 1996, SPMR; GR, 1951, 1952, HB; Head, R. Nene, 1994, ASL; MSQ, 1999, 2000, 2001, MEA; Moor Closes, 1997, ASL; OB, 1941, MWG; RW, 1991, 1993, 1995, 2001, 2002, MEA; RIW, 1985, MEA, 1987, RSK; ST, 1984, 1995, MEA; TSP, 1994, AG; WS, 1899, EAWP.

Lasioglossum morio (Fab., 1793). Edwards & Broad, 2005. ANS Widespread. 18 records. 13 April-28 September. GP, 1992, 1993, 1997, MEA, 1994, RWJU; GR, 1942, HB; Kirton, 1951, BAH; KL, 1888, CFG; Linwood Warren, 1900, EAWP;

OB, 1941, 1948, MWG; RW, 1993, ASL, 1997, 2001, MEA; Skegness, 1900, JWC; Spridlington, 1996, AG; TSP, 1994, AG.

Lasioglossum smeathmanellum (Kirby, 1802). Edwards & Broad, 2005. ANS Widespread, 6 records. 28 May-8 October. Blankney Fen, 2000, JH; Burton, 1941, MWG; GP, 1996, SPMR; OB, 1941, MWG; Tattershall, 1938, MWG; West Marsh, Grimsby, 2008, ALP.

Genus **Sphecodes** Latreille, 1804.
Small to medium cleptoparasitic bees usually on *Halictus* and *Lasioglossum*, but *S. pellucidus* is a cleptoparasite of *Andrena barbilabris*. Sparsely hairy with black cuticle, usually with red marks on the gaster. Females lack pollen-carrying hairs. Nationally 17 species with 11 species in Lincolnshire.

Sphecodes crassus Thomson, 1870. Nb, ANS Scarce. 7 records. 13 May-21 July. GP, 1995, 1996, 1997, MEA; MSQ, 1994, MEA; Raithby, 1941, MWG; RW, 2001, MEA; ST, 1998, MEA.

Sphecodes ephippius (Linn., 1767). ANS Widespread. 26 records. 13 April-17 September. Caistor Moor, 2008, ALP; GR, 1942, 1951, HB; Irby Dales, 2008, ALP; Laughton Common, 1996, RWJU; MSQ, 1999, 2001, MEA; OB, 1941, MWG; Owlet Plantation NR, 2008, ALP; RW, 1992, 1993, 1995, 1996, 1997, 2002, 2003, MEA; ST, 1998, MEA; Scotton Common, 2008, ALP; Welton-le-Wold, 2000, MEA; WNP, 2007, 2008, PP.

Sphecodes geoffrellus (Kirby, 1802). ANS Universal. 34 records. 1 May-29 September. Caistor Moor, 2008, ALP; GP, 1994, RWJU, 1996, 1997, MEA; GR, 1942, HB; KM, 1996, MEA; MT, 1988, 1989, 1990 MEA; MSQ, 1988, 1989, 1994, 1999, 2000, 2001, MEA; OB, 1941, MWG; RW, 1989, 1994, 1996, 2001, 2002, MEA; RIW, 1984, 1985, 1987, MEA; ST, 1995, 1996, MEA; Scotton Common, 1983, 1988, MEA; Tattershall, 1994, 1995, AG.

Sphecodes gibbus (Linn., 1758). Edwards & Broad, 2005. ANS Widespread. 33 records. 1 May-11 September. Caistor Moor, 2008, ALP; Donington-on-Bain, 1886, HWK; GP, 1991, 1992, 1995, 1996, MEA, 1994, RWJU, 1996, SPMR; GR, 1942, 1943, HB; KM, 1995, MEA; KL, 1888, CFG; Laughton Common, 1983, MEA, 1996, AG; Linwood Warren, 1900, EAWP; MT, 1988, 1990, MEA; MSQ, 1988, 2000, MEA; Nettleton, 1997, AG; OB, 1941, MWG; Owlet Plantation NR, 2008, ALP; ST, 1995, MEA; Scunthorpe, 1901, P.

Sphecodes hyalinatus von Hagens, 1882. ANS Widespread. 2 records. 28 May-19 August. RW, 1991, MEA; TSP, 1995, AG.

Sphecodes miniatus von Hagens, 1882. Nb, ANS Scarce. 4 records. 21 June-6 July. GR, 1942, HB; KL, 1888, CFG; OB, 1941, MWG.

Sphecodes monilicornis (Kirby, 1802). ANS Universal. 38 records. 29 April-29 September. Bradley Wood, 2007, ALP; Caistor Moor, 2007, 2008, ALP; GP, 1989, 1990, 1991, 1992, 1997, MEA; GR, 1942, HB; Irby Dales, 2008, ALP; Irby Upon Humber, 2007, ALP; KM, 1989, 1993, 1994, 1996, MEA; MSQ, 1988, 1990,

1992, 1994, 2000, 2001, MEA; OB, 1941, MWG; RW, 2001, MEA; RIW, 1985, 1986, MEA; ST, 1985, 1995, 1996, MEA; Skegness, 1900, JWC.

Sphecodes niger von Hagens, 1874. RDB3, RDB3, ANS Restricted. 1 record. 11 September. RW, 1999, MEA.

Sphecodes pellucidus Smith, 1845. ANS Widespread. 44 records. 13 April-29 September. GR, 1941, 1942, 1943, HB; KM, 1989, 1990, 1995, 1996, 1997, MEA; KL, 1888, CFG; Linwood Warren, 1900, EAWP; MT, 1988, 1989, 1990, MEA; MSQ, 1989, 1994, 2000, 2001, MEA; OB, 1941, MWG; RW, 1992, 1996, 2001, MEA; RIW, 1984, 1985, 1986, 1987, 1989, 1994, MEA; Scotton Common, 2008, ALP; TSP, 1994, 1995, AG; WNP, 1994, PP.

Sphecodes puncticeps Thomson, 1870. ANS Widespread, 8 records. 14 May-11 September. GP, 1996, SPMR; GR, 1942, HB; MSQ, 1992, 2000, 2001, MEA; Raithby, 1941, MWG; RW, 1994, 2002, MEA.

Sphecodes reticulatus Thomson, 1870. Edwards & Broad, 2006. RDB3, Na, ANS Widespread. 1 record. 13 June. MSQ, 2000, MEA.

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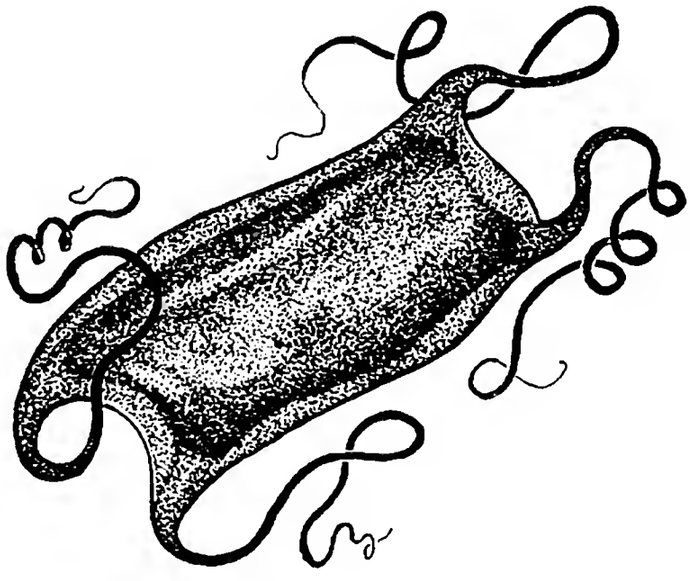
Appendix – The grid references and natural areas of sites. The actual location of some sites by some recorders (4, 5, 10, 11, 16, 17, 18, 21, 30, 34, 37, 40, 41, 44, 51) are unknown, so the grid references for these sites can only be approximate.

1. Blankney Fen. TF1262. The Fens.
2. Bradley Wood. TA2307. Lincs. Coast & Marshes.
3. Brumby Common. SE8709. North Lincs. Coversands & Clay Vale.
4. Burton. SK9674. North Lincs. Coversands & Clay Vale.
5. Cadney. TA0103. North Lincs. Coversands & Clay Vale.
6. Caistor Moor. TA0801. North Lincs. Coversands & Clay Vale.
7. Donnington-on-Bain. TF2382. Lincs. Wolds
8. Donna Nook. TF4299. Lincs. Coast & Marshes.
9. Gibraltar Point. TF5557. Lincs. Coast & Marshes.
10. Grantham. SK9136. Trent Valley & Rises.
11. Hameringham. TF3167. Lincs. Wolds.
12. Head, River Nene. TF4925. The Fens.
13. Irby Dale. TA1905. Lincs. Coast and Marshes.
14. Irby upon Humber. TA1905. Lincs. Coast & Marshes.

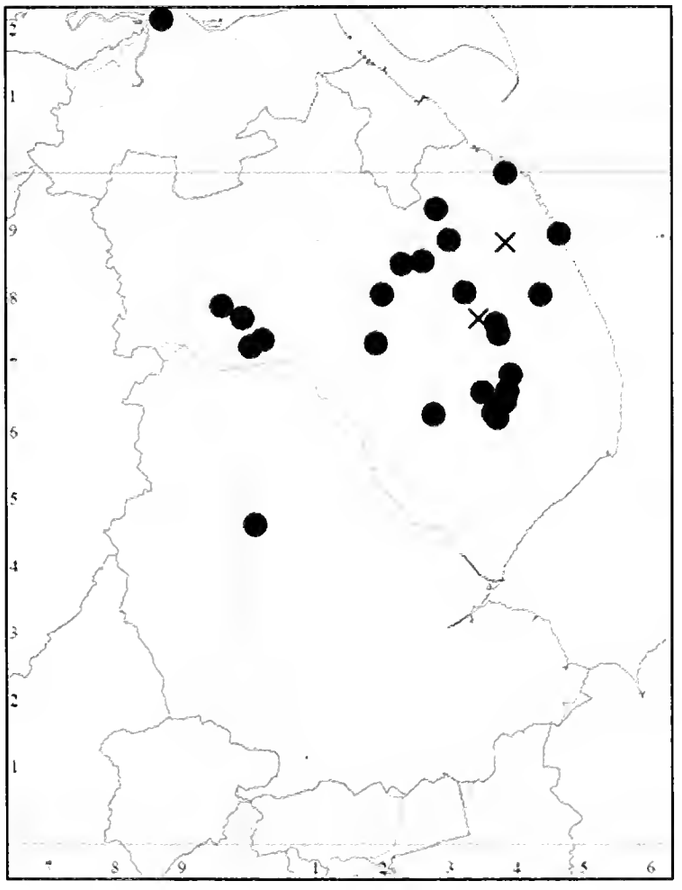
15. Kirkby Moor. TF2262. North Lincs. Coversands & Clay Vale.
16. Kirton. TF3038. The Fens.
17. Kirton Marsh. TF3436. The Fens.
18. Kirton-in-Lindsey. SK9398. North Lincs. Coversands & Clay Vale.
19. Laughton Common. SK8599. North Lincs. Coversands & Clay Vale
20. Linwood Warren. TF1387. North Lincs. Coversands & Clay Vale.
21. Mablethorpe. TF5085. Lincs. Coast & Marshes.
22. Manton & Twigmoor. SE9305. North Lincs. Coversands & Clay Vale.
23. Mavis Enderby Valley SSSI. TF3667. Lincs. Wolds.
24. Messingham Heath. SE8703. North Lincs. Coversands & Clay Vale.
25. Messingham Sand Quarry. SE9103. North Lincs. Coversands & Clay Vale.
26. Moor Closes. SK9843. Lincs. & Rutland Limestone.
27. Moor Farm NR. TF2263. North. Lincs. Coversands & Clay Vale.
28. Nettleton. TF0999. North Lincs. Coversands & Clay Vale.
29. Nettleton Wood. TF0899. North Lincs. Coversands & Clay Vale.
30. Old Bolingbroke. TF3564. North Lincs. Coversands & Clay Vale.
31. Owlet Plantation NR. SK8395. North Lincs. Coversands & Clay Vale.
32. Potterhanworth Wood. TF0766. Lincs. & Rutland Limestone.
33. Pyewipe, Grimsby. TA2412. Urban.
34. Raithby. TF3767. Lincs. Wolds.
35. Rauceby Warren. TF0343. Lincs. & Rutland Limestone.
36. Risby Warren. SE9313. North Lincs. Coversands & Clay Vale.
37. Salmonby. TF3273. Lincs. Wolds.
38. Saltfleetby-Theddlethorpe Dunes. TF4791. Lincs. Coast & Marshes.
39. Scotton Common. SK8698. North Lincs. Coversands & Clay Vale.
40. Scunthorpe. SE8910. North Lincs. Coversands & Clay Vale.
41. Skegness. TF5663. Lincs. Coast & Marshes.
42. Spalding. TF2421. The Fens.
43. Spridlington. TF0084. Lincs. & Rutland Limestone.
44. Tattershall. TF2158. North Lincs. Coversands & Clay Vale.
45. Tattershall Sand Pits. TF1959. North Lincs. Coversands & Clay Vale.
46. Tattershall Pits. TF2056. North Lincs. Coversands & Clay Vale.
47. The Grange, Hackorn. TF0082. Lincs. & Rutland Limestone.
48. Welton-le-Wold. TF2787. Lincs. Wolds.
49. West Marsh, Grimsby. TA2510. Urban.
50. Whisby Nature Park. SK9167. Trent Valley & Rises.
51. Woodhall Spa. TF1963. North Lincs. Coversands & Clay Vale.



THE RETURN OF THE FUMMARD
(*MUSTELA PUTORIUS SP.)*

Chris J. Manning

Garry Steele's polecat *Mustela putorius* road casualty from Walmsgate was an unexpected record for the county. The polecat had suffered a catastrophic decline during the 19th century with the last Lincolnshire record from Bardney in 1926 (Johnson, 1982), or so we thought. Garry's specimen was sent to the Vincent Wildlife Trust for identification and based on 'pelage characteristics', confirmed as a polecat. Interestingly, just over 2 years before in November 2005, a young polecat was recovered at South Cockerington; it was estimated as being 10-12 weeks old and so born in early to mid-August. This animal was later released in North Wales (Birks, 2008). Do these records, only 6 miles apart signify an established breeding population or is this the result of natural colonisation, escapees or perhaps a long-established population previously unnoticed? Nationally the polecat is re-colonising the UK from its Welsh stronghold (Birks & Kitchener, 1999). Given diligent recording, this would be detected by initial records from western Lincolnshire as they colonised the county.



Polecat (x) and polecat-ferret (•) distribution 2004-2008

The closest relative of the polecat is the domestic ferret *Mustela putorius* form *furo*, with 25 recorded in Lincolnshire since 2004, 18 of these in 2008 – most of these records are from road kills. Ferrets are treated as a separate species, but can be considered conspecific with polecats as genetically they differ by a single base transition of the cytochrome B haplotype, the differences in the phenotype are entirely due to selective breeding (Harris & Yalden, 2008). The studies of Birks & Kitchener (1999) conclude that pelage characteristics provide a reliable way of distinguishing between ferrets and polecats and collate well with measurements of post orbital breadth and cranial volume. Possibly some of these Lincolnshire ferret animals were recent escapees, but the number and widespread distribution does suggest that a hybrid *Mustela* population may be established in Lincolnshire.

Polecat adult
Photo Frank Greenaway/WWT

Colloquially, fummard was used for a fenland mammal and considered a subspecies of the polecat (Dear & Taylor, 1988). Perhaps this is a more appropriate term than 'ferrety' or 'hybrid' for feral polecat type animals in Lincolnshire. Dear & Taylor (1988) reported that the fummard is now extinct however Weaver (2000) provided anecdotal evidence of 'polecats' (fummards?) surviving in Lincolnshire until the 1930s. Johnson (1982) reported feral ferrets in the Wragby Woods, near Skellingthorpe and around Louth and included a photographic record of the Louth animal that has clear ferret characteristics. Records of fummards from Swaby/Raithby/Calceby date from 2004-2006 with anecdotal reports of predation of game birds in rearing pens dating from 2006 (Barker, 2009). A single fummard record from Pye's Hall in 2006 supports Walker's account (2009) that 'polecats have been seen at Saltfleetby and Donna Nook NNRs over the past 4 years'. Is the 1930 fummard population descended from the one described by Dear & Taylor (1988) and did it persist to the present day? In the absence of additional records we can only speculate on this fascinating question.

Ferret/ fummard found near Haugham, October 2008
Photo Garry Steele

The variability of pelage characteristics in Lincolnshire's fummard population is probably due to Mendelian genetics and occasional escapees. Today the availability of dry biscuit complete food makes these carnivores easier to keep and breed in captivity and they are even kept as pets.

Ferrets are still used for rabbiting with the bigger polecat type now popular and perhaps more likely to survive and breed in the wild. With ferrets now available cheaply perhaps less effort is put into capturing lost ferrets. Legally, *Mustela putorius* is listed in Schedule 6 of the Wildlife & Countryside Act 1981 and Schedule 3 of The Conservation (Natural Habitats, &c.) Regulations 1994 and this scheduling will apply to the sub species so technically it may be illegal to trap an escaped ferret without a license.

Lincolnshire's fummard population has some animals with the pelage characteristics of the polecat, but the population is of the fummard (ferret) type. The population will be subject to further ferret escapees, and eventually in the expanding polecat population, introgression between these gene sources will be a regular factor in the county's fummard population. The ferret and the polecat occupy the same ecological niche (Birks & Kitchener, 1999) as part of our native fauna. It will be interesting to monitor this population's survival and spread.

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WHAT COMES TO LIGHT?

Colin Smith

It is commonly known that most moth recording is done with the use of light traps. Traps come in many forms and the lights used vary even more. Whichever sort is used, recording need not be restricted to moths as many other species are caught, sometimes in large numbers. In the late summer hornets are often caught and I have often had to deal with more that 40 in a trap; wasps can be worse and I have had as many as 120 making emptying the trap a tricky process. The hornets fly during the night but wasps can be largely avoided by switching the light on after dark. Flies often come in huge numbers especially when the trap is sited by water; hundreds of a single species can cover the trap inside and out. Many of the flies are tiny and I have estimated on occasions there may be as many as 3000 of many differing species covering the bottom of the trap. Crane flies come to light in their season and there are even a number of hoverfly species that are attracted. Aphids can, in the right conditions, be nearly as numerous as the small flies but less varied in numbers of species. Beetles are regularly caught, from large dung beetles through water beetles and weevils to many tiny rove beetles, sometimes in large numbers. Surprisingly spiders also

come to light traps usually in small numbers but sometimes there can be as many as 25. Annette Binding has been identifying the spiders caught and we have had 45 different species so far. In the autumn, harvestmen are also attracted to some types of light and on occasions the inside of the trap can be teaming with them. Other species that regularly turn up include lacewings, plant and water bugs, Ichneumon flies, mayflies, caddisflies and plant hoppers.

To show the numbers that can be involved I have detailed below the catch from 2 x 125watt MV traps sited by the forestry office in Willingham Forest on the 14th July 2008 at the height of the moth season. One was in the middle of a hardcore carpark at the back and the other on a mown grass area in the front, about 30 meters apart. I put out two traps whenever possible as it usually increases the species count by 25 to 30% but does double the total numbers and therefore the time needed to check them. The traps were left overnight and I emptied them the following morning. Some of the numbers are estimated and there were probably things that were overlooked as I only had an hour and a half to clear them.

Moths

Barred Red	1	Brimstone Moth	4	Clay	7
Barred Straw	12	Broad-bordered Yellow U/wing	6	Cloaked Minor	4
Beautiful Golden Y	1	Brown Rustic	17	Clouded Border	23
Beautiful Hook-tip	2	Brown-line Bright Eye	1	Clouded Silver	6
Blood-vein	4	Buff Arches	6	Common Emerald	12
Bordered White	34	Buff-tip	12	Common Footman	50
Bright-line Brown-eye	13	Burnished Brass	4	Common Lutestring	1
Common Pug	11	Heart and Dart	27	Scallop Shell	2
Common Rustic	75	Iron Prominent	1	Scarce Footman	10
Common Wave	8	Large Emerald	5	Short-cloaked Moth	1
Common White Wave	5	Large Twin-spot Carpet	7	Single-dotted Wave	9
Coronet	1	Large Yellow Underwing	39	Slender Brindle	6
Coxcomb Prominent	5	Leopard Moth	1	Small Angle Shades	9
Dark Arches	80	Lesser Broad-brd. Yel. U/wing	30	Small Blood-vein	1
Dark-barred Twin-spot Carpet	13	Lesser Common Rustic	3	Small Dotted Buff	2
Dot Moth	1	Lesser Swallow Prominent	21	Small Fan-footed Wave	26
Dotted Clay	24	Light Arches	9	Small Phoenix	15
Double Lobed	1	Light Emerald	6	Small Rivulet	13

Double Square-spot	20	Lychnis	3	Small Scallop	1
Double-striped Pug	1	Marbled Minor	23	Small Yellow Wave	1
Drinker	4	Middle-barred Minor	1	Smoky Wainscot	32
Dun-bar	11	Mottled Beauty	30	Snout	14
Dusky Brocade	7	Mottled Rustic	40	Spectacle	8
Dingy Footman	100	Oak Nycteoline	1	Straw Dot	50
Dingy Shears	2	Olive	1	Suspected	1
Dingy Shell	1	Peach Blossom	2	Swallow Prominent	6
Early Thorn	7	Pebble Hook-tip	10	Swallow-tailed Moth	1
Elephant Hawk-moth	8	Pebble Prominent	7	Tawny Marbled Minor	3
Engrailed	18	Peppered Moth	9	Tawny-barred Angle	1
Fan-foot	4	Pine Hawk-moth	3	Turnip Moth	1
Flame	7	Pinion-streaked Snout	2	Twin-spot Carpet	1
Flame Shoulder	31	Plain Wave	1	Uncertain	67
Four-dotted Footman	22	Poplar Grey	14	Valerian Pug	1
Green Pug	4	Purple Clay	4	Vine's Rustic	1
Grey Arches	6	Riband Wave	21	V-Pug	1
Grey Dagger	3	Rosy Footman	16	White Satin	1
Grey Pine Carpet	4	Rustic	4	Wormwood Pug	3
Grey Pug	1	Sandy Carpet	1	Yellow-tail	1
Acentria ephemerella	8	*Chrysoteuchia culmella*	46		
Acleris ferrugana	5	*Clepsis consimilana*	8	*Helcystogramma rufescens*	1
Acleris hastiana	1	*Clepsis spectrana*	1	*Limnaecia phragmitella*	4
Acrobasis consociella	1	*Cnephasia asseclana*	21	*Lozotaeniodes formosanus*	7
Adaina microdactyla	1	*Cnephasia stephensiana*	34	*Metzneria lappella*	2
Aethes rubigana	1	*Coleophora albidella*	1	*Mompha ochraceella*	4
Agapeta hamana	15	*Coleophora flavipennella*	1	*Mompha sturnipennella*	1
Agriphila straminella	30	*Coleophora lineolea*	1	*Monochroa lucidella*	1
Ancylis achatana	3	*Coleophora lutipennella*	1	*Ocnerostoma friesei*	1
Aphelia paleana	4	*Coleophora striatipennella*	2	*Opostega salaciella*	1

Apotomis betuletana	26	*Crambus pascuella*	3	*Orthopygia glaucinalis*	1
Archips podana	7	*Crambus perlella*	27	*Paraswammerdamia nebulella*	4
Argyresthia conjugella	1	*Dioryctria abietella*	7	*Parornix betulae*	1
Argyresthia goedartella	16	*Dipleurina lacustrata*	7	*Phlyctaenia coronata*	1
Argyresthia retinella	1	*Elophila nymphaeata*	1	*Phlyctaenia perlucidalis*	1
Athrips mouffetella	1	*Endotricha flammealis*	8	*Pleuroptya ruralis*	21
Batrachedra pinicolella	3	*Endrosis sarcitrella*	3	*Rhopobota naevana*	3
Blastobasis lacticolella	17	*Epiblema roborana*	4	*Scoparia ambigualis*	29
Bryotropha senectella	1	*Eucosma hohenwartiana*	3	*Spilonota ocellana*	15
Bryotropha terrella	1	*Eudonia mercurella*	4	*Stenoptilia pterodactyla*	3
Caloptilia stigmatella	1	*Eudonia pallida*	1	*Tinea trinotella*	1
Carcina quercana	2	*Eurrhypara hortulata*	4	*Trachycera advenella*	14
Catoptria falsella	5	*Euzophera pinguis*	1	*Udea prunalis*	2
Catoptria pinella	6	*Exoteleia dodecella*	2	*Yponomeuta cagnagella*	7
Celypha lacunana	29	*Gypsonoma dealbana*	6	*Yponomeuta evonymella*	8
Celypha striana	16	*Hedya nubiferana*	17	*Ypsoloph nemorella*	1
Chilo phragmitella	1	*Hedya pruniana*	7		

There were 1337 macro moths of 114 species and 558 micro moths of 79 species, a particularly good catch in terms of species but not an unusual total for a woodland site.

Beetles

Agriotes pallidulus	1	*Dryocoetinus villosus*	1	*Lagria hirta*	2
Amara apricaria	5	*Gyrinus distinctus*	1	*Lasiotrechus discus*	3
Anotylus rugosus	1	*Gyrinus substriatus*	2	*Malthodes minimus*	1
Aphodius rufipes	8	*Halyzia sedecimguttata*	3	*Necrodes littoralis*	1
Atomaria linearis	2	*Harpalus rufipes*	10	*Rhagonycha fulva*	20
Bradycellus harpalinus	150	*Hydrobius fuscipes*	10	*Serica brunnea*	10
Bradycellus verbasci	1	*Ilybius ater*	15	*Stenolophus mixtus*	2
Dalopius marginatus	1	*Ilybius fuliginosus*	30		

There were 280 beetles of 23 species I could identify and another 100 of about 20 species I could not. It was a good catch of beetles although there were not so many tiny species.

Bugs

Callicorixa praeusta	25	*Lygus wagneri*	1	*Sigara falleni*	10
Calocoris norwegicus	1	*Nabis ferus*	1	*Sigara lateralis*	1
Hesperocorixa sahlbergi	10	*Phylus melanocephalus*	1	*Stenodema calcarata*	1
Lygus rugulipennis	6	*Sigara distincta*	1	*Stenotus binotatus*	2

There were 56 bugs of 12 species, 47 of them water bugs, about average for the type of habitat.

Lacewings

Chrysopa commata	1	*Chrysopa perla*	3	*Nothochrysa capitata*	1

There were 5 lacewings of 3 species.

Also found in the traps were: *Panorpa germanica* - a scorpion fly, *Rhagio tringarius* (the only fly I could identify of somewhere around 300), *Pardosa amentata* - a spider.

LINCOLNSHIRE NATURAL HISTORY IN 2008

BATS

Annette Faulkner

Lincolnshire Bat Group carried out winter hibernation surveys at nine sites including the Transportation Cells at Lincoln Castle, where in January the only species found was a barbastelle *Barbastellus barbastellus*, instead of the anticipated Natterer's *Myotis nattereri*! By February it had moved elsewhere. The barbastelle at the Louth site was not found.

Unlike 2007, the breeding season continued normally with only small numbers of lost/abandoned babies. However, casualties of all types – sick, injured, underweight – tend to 'clump' in certain areas each year and this year it was the Lincoln area's turn, with the two carers there kept extremely busy. Amongst the usual preponderance of common and soprano pipistrelles were two Nathusius' pipistrelles *Pipistrellus nathusii*.

Common pipistrelle Photo Nick Tribe

Nathusius' pipistrelle is a strongly migratory species and has been recorded in small numbers in the UK for many years. As with most species the advancement of detector technology means that they are much easier to filter out from other signals than formerly, and they have now been confirmed at Belton (Grantham). But the first breeding record was in 1995 when an orphaned infant was found near Skegness, successfully hand-reared, and identified as a Nathusius' as he grew up. The roost of a very small colony was subsequently located but has now unfortunately died out.

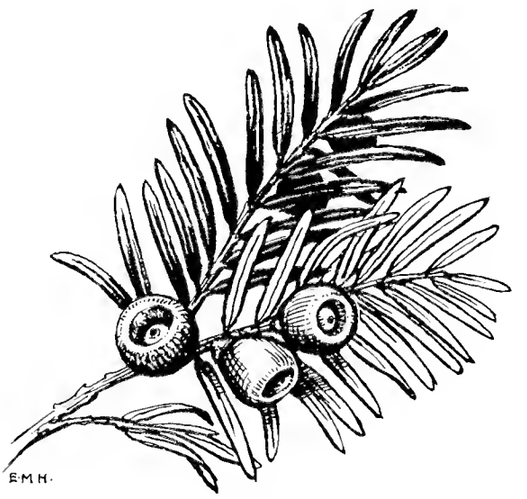
This time the call came that a bat had been found in a delivery of timber at Lincoln. It was taken into care and its large size and other features determined that it was a male Nathusius', confirmed by Jon Russ, the national expert on this species. Detective work, with the help of the Bat Conservation Trust, located the source of the timber as Liverpool, where it had been repackaged from an American consignment. As Nathusius' pipistrelles are not found in the US, in due course he was taken back to Liverpool and released, close to where he was most likely to have stowed away.

Then in September a further Nathusius' pipistrelle was taken into care, this time found grounded in Lincoln. This one was a female with a little more chance of being home-grown. Identification was determined from the features studied on the first one, again confirmed by Jon Russ, and it is likely that the identification of these bats, only a little larger than large female common and soprano pipistrelles,

may be being overlooked if they come into care, and that they are more widespread than we think. This bat was released where found, fit and well.

Nathusius' pipistrelle
Photo Nick Tribe

Work at the Limewoods continued, with the bat boxes being systematically surveyed prior to the breeding season. Here a number of pregnant female brown long-eared bats *Plecotus auritus* were found with completely bald abdomens and chests. Photographs were sent to an expert, who said this was entirely due to malnutrition of the mothers – a knock-on effect from the shortage of moth spp. the previous year – and that they would re-grow their fur once they had had their babies. If the prolonged wet weather was a manifestation of global warming, as some say, then here is yet another example of the interdependence of all species.



ACULEATE HYMENOPTERA

Michael Archer

The interesting and important records received during 2008 are:

Priocnemis coriacea Dahlbom, Owlet Plantation, A.L. Phillips. Third Lincolnshire record.
Podalonia affinis (Kirby), Donna Nook, A.L. Phillips. Sixth Lincolnshire record.

Cerceris arenaria Photo R. Key

Cerceris arenaria (Linn.), Whisby Nature Park, Lincoln, P. Porter. New species for Lincolnshire from Whisby Nature Park during 2007.
Andrena tibialis (Kirby), Owlet Plantation, A.L. Phillips. Fourth record for Lincolnshire.
Lasioglossum quadrinotatum (Kirby), Whisby Nature Park, Lincoln, P. Porter. Fourth record for Lincolnshire.
Nomada lathburiana (Kirby), Owlet Plantation, Linwood, Warren, Irby Dales, A.L. Phillips. Fourth, fifth and sixth records for Lincolnshire.
Bombus hypnorum (Linn.), Gosberton Clough, L. Hebron, New species for Lincolnshire.
Bombus subterraneus (Linn.) A queen found in Keighley Museum, Yorkshire by M.E. Archer from Little, Holland, Lincolnshire, 1917, collector C.H.V.

I would like to thank the following six persons for sending in records: A. Dale, A. Faulkner, L. Hebron, D. Johnson, A.L. Phillips and P. Porter.

BOTANY

Paul Kirby

Seven field meetings were held in 2008:

April 13	South Elkington - Welton Vale, TF28
May 10	Owlet Plantation, SK89
June 1	Lea Marsh, SK88
July 5	Tothill Motte & Bailey, TF48
August 3	Rauceby Warren, TF04
September 7	Great West Wood & Cocklode Wood, TF17
October 19	Linwood Warren, TF18. Fungus Foray

Though too early in the year to find many plants in flower, a good selection of conifers were recorded at the Welton Vale meeting. These included fine specimens of coast redwood *Sequoia sempervirens*, Wellingtonia *Sequoiadendron giganteum*, Douglas fir *Pseudotsuga menziesii*, western hemlock *Tsuga heterophylla*, black pine *Pinus nigra*, Morinda spruce *Picea smithiana*, Norway spruce *P. abies*, deodar *Cedrus deodara*, Cedar of Lebanon *C. libani*, western red cedar *Thuja plicata*, Monterey cypress *Cupressus macrocarpa*, Lawson cypress *Chamaecyparis lawsoniana*, European larch *Larix decidua* and yew *Taxus baccata*.

Conifers are an interesting and varied group which make a significant contribution to our vegetation and landscape. They merit serious attention but unfortunately appear to be invisible to many botanists.

New county records

Borrer's saltmarsh-grass *Puccinellia fasciculata* confirmed by Dr T. A. Cope, BSBI grass referee. Bill Meek found this nationally scarce grass in September growing among reflexed saltmarsh-grass *Puccinellia distans* at the base of the sea wall in TF4729 on the Holbeach Ranges near Gedney Drove End. It is a plant of bare disturbed saline soil and though known from the east side of the Wash and the north Norfolk coast, where it is at the northerly limit of its British distribution, this is the first record for Lincolnshire.

Butterwick hybrid sedge (left) and *Carex* x *fulva* (right). Photo M. S. Porter

In 2008 specimens of two sedges were sent to M. Porter & Dr M. J. Foley, the BSBI hybrid sedge referees. One was confirmed as *Carex x subgracilis* a hybrid between lesser pond-sedge *C. acutiformis* and slender tufted-sedge *C. acuta* but the other could only be provisionally named as *Carex x fulva* a hybrid between tawny sedge *Carex hostiana* and one of the yellow sedges *C. viridula*. Both of these hybrids are new to Lincolnshire.

The criteria for hybrid sedge identification are discussed in the latest edition of the BSBI Sedges handbook (Jermy et al. 2007) and the account concludes 'In the field, the presence of the putative parents is a useful guide when supported by morphological evidence suggesting a degree of intermediacy, but in some cases one of the actual parents may be absent'.

The *Carex x subgracilis* was found in July by Kerry Harrison growing as narrow 10 metre strip along the edge of the Counter Drain at Baston Fen, TF1317; 'Found..... usually in presence of both parents' is the comment in the sedge handbook. Lesser pond-sedge is plentiful at Baston but there are no records for slender tufted-sedge, the other parent, on the Baston reserve or in TF11. Nationally there are very few confirmed records for this hybrid which is 'not easy to identify' (op. cit.).

A single plant of the other sedge hybrid was found in early June on Butterwick Common SE80 by JF & PK. *Carex x fulva*, 'perhaps the most common *Carex* hybrid in the British Isles' (op. cit.) was the first possibility, but the male and female spikes (see photograph) were unusually long and more typical of *Carex x muelleriana* (*Carex distans x C. hostiana*). This is an extreme rarity with only two confirmed records in Britain, one from North Hampshire and the other, interestingly, from Holton-le-Moor in Lincolnshire.

Tawny sedge *Carex hostiana* has always been rare in Lincolnshire and was last seen in 1986 at Twigmoor. Distant sedge *Carex distans* is very scarce in the county away from the coast. Common yellow-sedge *Carex viridula* subsp. *oedocarpa* is present at Butterwick, in fact the hybrid plant was growing abutting this sedge, but to further complicate matters the size of the utricles of the hybrid suggested that the yellow-sedge parent was long-stalked yellow-sedge *Carex viridula* subsp. *brachyrryncha,* another sedge now scarce in the county, rather than subsp. *oedocarpa.* None of these putative parents were found at Butterwick or have ever been recorded there or in hectad SE80. In the absence of any supporting parental evidence the identity of the sedge remains uncertain. For the moment it has been accepted as 'a rather unsatisfactory *Carex x fulva'.* Butterwick Common is a large site that has not yet been thoroughly investigated. Further surveys may help resolve the matter.

The Nottinghamshire recorders David Wood & Mark Woods submitted several very interesting records from Gibraltar Point, TF55/56 made over the last few years.

Rubus x *pseudoidaeus (Rubus idaeus x R. caesius)* in 2004. They noted a large patch of this raspberry - dewberry hybrid in TF5558 growing by the northeast corner of the Freshwater Marsh. A new county record, this colony is now very extensive (PK & CH, 2008).

Sea spurge *Euphorbia paralias.* Found in 2006 by DW & MW, growing on the low dunes in TF5659. Although long known from across the Wash on the north Norfolk coast this is the first record for Lincolnshire and Gibraltar Point is now the most northerly site for the species on the east coast. There was a further record in 2008 when a single plant was found by PK & CH growing among open marram *Ammophila arenaria* on the dunes in TF5658.

Guernsey fleabane *Conyza sumatrensis.* Found by DW and MW in October 2004 and again in 2006 in TF5557. There are already records for this plant in Lincolnshire but this find in 2004 predates them all and so qualifies as the first for the county. In 2008 it was noted to be locally abundant on the dunes in TF5658 (PK). It is a tall conspicuous annual, usually found on urban waste land, now spreading rapidly in England.

Pale Galingale *Cyperus eragrostis* confirmed by John Poland, the BSBI vegetative plant referee. Bill Meek found 2 clumps of this tropical American plant near a composting site in TF45. It is thought to have been introduced in to Britain c. 1790, first recorded in the wild in 1909 (Preston *et al*, 2002) and there are now numerous scattered records in southern England. This Lincolnshire site is at the northern limit of its present distribution on mainland Britain.

Hairy bird's-foot-trefoil *Lotus subbiflorus.* In June, Tony Marshall found a single plant in flower on a road verge in Barton upon Humber, TA02. The plant was re-found in September by PK & CH still flowering. It is native in the south and southwest of Britain typically occurring in grassland on coastal cliffs but a casual here.

Balkan spurge *Euphorbia oblongata* determined by Timothy Walker, BSBI Euphorbia referee. A single plant was found in August by PK & CH in the corner of an arable field beside Horncastle Lane, Grange de Lings, SK98; a garden escape. First recorded in the wild in 1938 (op. cit.) it now appears to be spreading but there are still only a few records in southern England.

New record for VC54

Mossy stonecrop *Crassula tillaea* is a nationally scarce, tiny, autumn germinating annual of bare sandy ground. It was recorded by DW & MW in October 2004 and again in 2006 on the low foredunes at Gibraltar Point in TF5659. There are previous Lincolnshire records for Vc53 from Stapleford Wood, where it was last seen in 1977 but the 2004 record is the first for Vc54.

Notable records

Slender spike-rush *Eleocharis uniglumis* confirmed Jeremy Roberts, BSBI referee. In June Kerry Harrison found a large but localised population at Pinchbeck Slipe NR, TF1924. Although known from two coastal locations in VC54 this is the first record for VC53 for over a century and the only extant inland site in the County.

Meadow thistle *Cirsium dissectum*. In June several scattered patches of meadow thistle were confirmed on Butterwick Common SE8506 by PK & JF. This attractive thistle was once present at several sites in Lincolnshire, mostly in the northwest of the county, but by 2000 only one colony remained, and that was an introduction. Then in 2001 a large and thriving population was discovered in Chambers Farm Meadow TF1473 and now this second population has been found.

Meadow thistle *Cirsium dissectum* Photo B. Hedley

Lady's-mantle *Alchemilla xanthochlora*. In May, found in plenty on tracks in a woodland ride in TA10 by Bill Meek. It is a scarce and very local species in North Lincolnshire.

Records of rarely recorded species

Babington's orache *Atriplex glabriuscula*. Recorded in 2007 at Gibraltar Point, TF5557 by DW & MW. This native coastal plant is difficult to identify and there are few records for Lincolnshire.

Large trefoil *Trifolium aureum*. Recorded in July at Lincoln on the Allenby Road Industrial Estate, TF0071 by Brian Hedley. A casual, probably introduced in some seed mix used on the amenity grassland areas. Although not included in The Flora of Lincolnshire (Gibbons 1975) there are old Lincolnshire records for this clover (Peacock 1897, 1909 & 1911 and Mason 1928) and also three specimens in the County Herbarium. The above record, however, is the first for over 100 years.

Rescue brome *Ceratochloa cathartica*. In June an extensive patch of this tall grass was found in an arable edge at Willoughby Hills, TF34 by PK. A native of the Americas and casual here. The only previous records in the county are from Grimsby Docks and the Cleethorpes – Humberston Dumps in the 1950's & 1960's.

Early goldenrod *Solidago gigantea*. Recorded on Cleethorpes Dunes, TA30 by Bill Meek. Long known in Britain and now widely grown as a garden plant. In the wild it is now widespread but in Lincolnshire is certainly much scarcer than its North American compatriot, Canadian goldenrod *S. canadensis*. There may well be some confusion between the records for two species

Many thanks to all who sent in records in 2008

Key to initials in text

JF, Jeremy Fraser - CH, Colin Hutchinson – PK, Paul Kirby - DW, David Wood - MW, Mark Woods.

NCR, New County Record.

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FRESHWATER INVERTEBRATES

Richard Chadd

The highlight in 2008 was the discovery by the author of larvae of the rare polycentropodid caddisfly *Plectrocnemia brevis* McLachlan in a spring at Whitton, near Alkborough (SE8992624476) on 5th November. The nearest records to Lincolnshire, presently unconfirmed, are near Pickering in the North Yorkshire Moors and Castle Eden Dene in County Durham, and the species is usually associated with western Britain (Devon, Wales, Cheshire and Lancashire). The County Durham site is somewhat similar to Whitton Spring, in that it is a highly calcareous, spring-fed system running directly into the sea.

P. brevis, in common with other polycentropodids, is a carnivore, spinning silken tubes which it uses to snare live invertebrate prey. Adult specimens will be sought in future to confirm this record, as larval features to separate members of this genus can be somewhat cryptic and the specimens were found together with a single specimen of a very common, related species, *Plectrocnemia conspersa* (Curtis). Larvae of the nationally notable hill soldierfly *Oxycera pardalina* Meigen were also present at Whitton Spring.

A colleague at the Environment Agency, Holly Tucker, found a single specimen of the greater water boatman *Notonecta obliqua* Thunberg under a margin of reed canary grass *Phalaris arundinacea* in the West River Glen at Burton-le-Coggles (SK987261) on 22nd September. This is a common species nationally, but, as an insect usually associated with acidic, peaty pools in moorland, often at high altitudes, it is very rare in Lincolnshire, being only really common in the west of Britain.

On the same day the author also took the related species *Notonecta maculata* Fabricius on the same river, but this time at Swayfield Road (SK998234). Though not as rare as *N. obliqua* in Lincolnshire, the species is far from common, being recorded more frequently in the south of England and Wales. Interestingly, the species is known to occur occasionally in rivers that have been recently dry and the site at Swayfield Road dries-up in summer months. The more usual haunts of this insect, however, are still water in barren habitats, such as cattle troughs and concrete-lined ponds.

A larval record of the mayfly *Caenis pseudorivulorum* Eaton was obtained by Martin Gammell, also working for the Environment Agency, on 27th March. This was also from the West Glen, this time at Boothby Pagnell (SK973306) a few kilometres from the River's headwaters. This is a fairly recent immigrant species from continental Europe and seems to favour rivers with a substratum of large stones, as can be found at Boothby Pagnell. It is not new to Lincolnshire, larvae having been taken by the author in the River Lymn at Partney in 1997. It has been absent from the latter site ever since, however, so a new occurrence is welcome.

Other records of note for 2008 include the uncommon mayfly *Caenis macrura* Stephens, taken in the Black Dyke near Caenby Corner on the A15 north of Lincoln and in the Woldgrift Drain in Alford. The uncommon leech *Batracobdella* (= *Glossiphonia*) *complanata* (Carena) was found in the upper River Tham below Tortoiseshell Wood Nature Reserve.

Correction: In the 2008 copy of 'The Lincolnshire Naturalist' (Vol. 27, Part 1) a record of the scavenger beetle *Helophorus dorsalis* (Marsham) was reported from a pool in the channel of the Upper River Witham at Easton Park – an unusual environment for the species. Further appraisal of the specimen by this author has led to its re-identification as the much commoner (and more likely) species *Helophorus minutus* Fabricius.

MAMMALS

Chris J. Manning

In 2008, 838 records were entered into the mammal database. The most common species were brown hare *Lepus europaeus* (136 records), badger *Meles meles* (113), grey squirrel *Sciurus carolinensis* (71), hedgehog *Erinaceus europaeus* (66) and rabbit *Oryctolagus cuniculus* (57). Most records were of sightings (479) and road casualties (221).

The only harvest mouse *Micromys minutus* record was from an owl pellet provided by D. E. Capes; hopefully more records can be obtained from dissecting pellets. It was a surprise to find harvest mouse for sale as pets in a garden centre near Spalding, the source of these isn't known. It is not illegal to trap and keep harvest mouse as pets. Apparently they are odourless and breed freely, perhaps leading to surplus animals being released.

The find of the year was Garry Steele's polecat *Mustela putorius* road casualty on the A16 near Walmsgate. Identification was confirmed by the Vincent Wildlife Trust who examined the carcass. An account of the polecat's status in Lincolnshire is provided in the article The Return of the Fummard elsewhere in this publication. The sighting of the year was undoubtedly Ian Rees's record of a female otter *Lutra lutra* with two cubs on an island in the middle of a trout fishery in the northern part of the Wolds.

Thirteen recorders provided more than 10 records during the year: A. E. Binding, A. Chick, D. Clarke, B. Cunnington, V. Fleming, A. Goodall, J. Goy, S. Green, B. Hedley, R. Labbett, V. Kirton, K.D. Robertson, N. Tribe, M. West. Again records were also collected from the Wildnews Bulletin and the Lincolnshire Bird Club online forums.

BRYOPHYTES

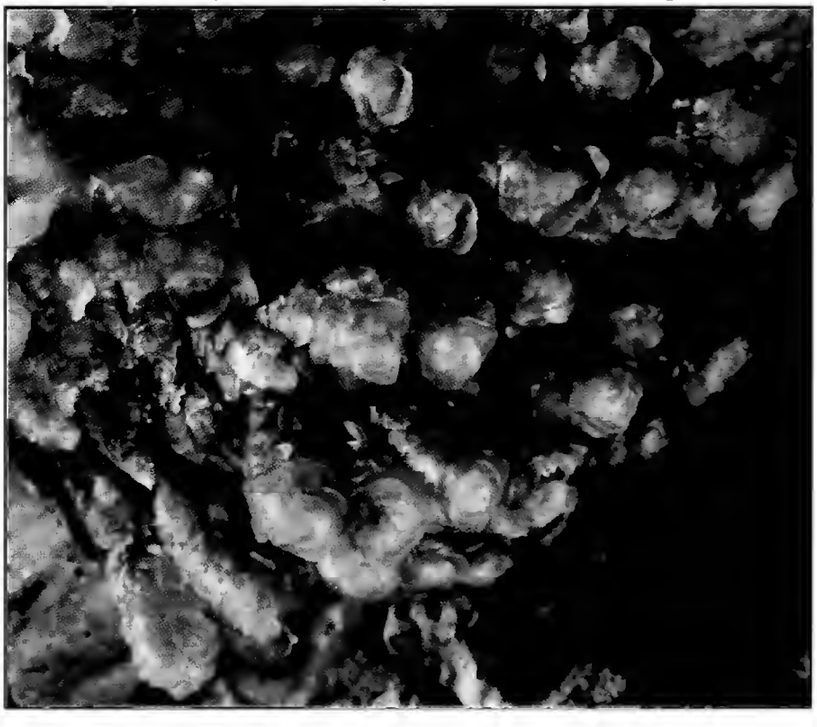
Christine Rieser

Churches and their accompanying gravestones offer a habitat for rock-dwelling species that does not commonly occur elsewhere in Lincolnshire and a number of rather uncommon mosses and liverworts have been recorded here this year. Churches in the Marsh to the east of Louth have been particularly productive especially the shaded north walls.

Racomitrium fasciculare Photo Christine Rieser

One new record for the county was *Racomitrium fasciculare* which was found at Maltby-le-Marsh Church on a permanently wet area of sandstone wall under a broken rain-water guttering.

Racomitrium species are very rare in Lincolnshire as they are generally acid rock and sand species. They are alone in having narrow rectangular mid leaf cells with sinuose incrassate walls, instantly recognisable under the microscope.

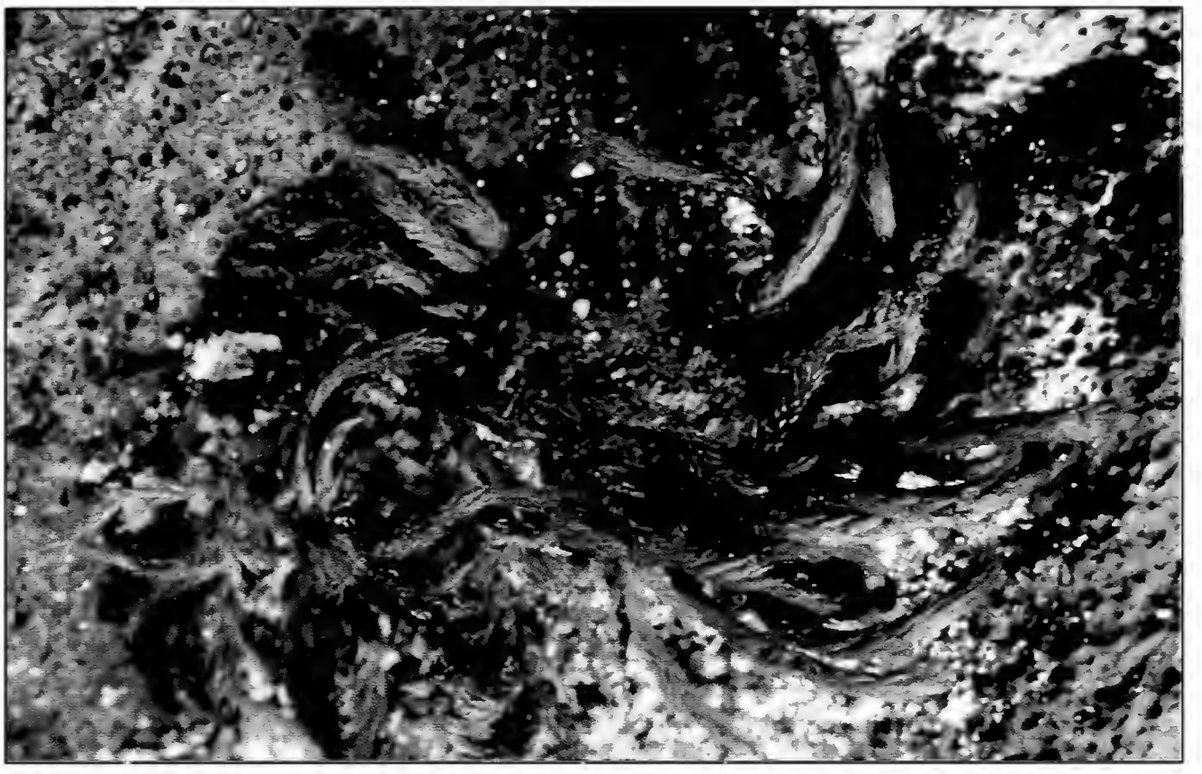


Scapania undulate
Photo Christine Rieser

At the same site, a leafy liverwort *Scapania undulata* was on display as a few large pale green patches. *Scapania* species, which have

the leaf folded back as a secondary lobe, are also very rare in Lincolnshire and this one is a species of acidic rocks at stream sides or in bogs in the western uplands.

In Grimoldby churchyard another moss was found that is rarely seen here; *Leucodon sciuroides* was found on a limestone grave. *Leucodon sciuroides* is primarily an epiphyte and there are several old records for the species in Lincolnshire but it is considered to have declined during the years of sulphur dioxide pollution and have survived only occasionally as here, on limestone.



Leucodon sciuroides Photo Christine Rieser

Another locally rare moss *Gyroweisia tenuis* was seen as a thin green felt on the damp base of the wall of Grainthorpe church where the sandstone is supplemented by some limestone. This is a minute plant about 2mm high and is easily overlooked. It was accompanied by *Pseudocrossidium revolutum* a moss found occasionally on old walls, also recorded in Lincolnshire from chalk

Several other mosses uncommon for the area have been found including *Didymodon rigidulus,* found in four churchyards although not recorded in vc54 until 2006 when it was found at Epworth church. Also the saxicolous Orthotrichums, *O. anomalum* and *O. cupulatum* have been found several times. *Brachythecium populeum,* one of the branched mosses was found on a tombstone in Langton by Wragby churchyard. This was only recorded recently once from vc54, and from vc53 for the first time recently from stone at Spalding Cemetery

Apart from the churchyards, other sites bearing uncommon species found this year include *Philonotis fontana* at Whisby in a wet area near the education building where it was found by Sue Knight. It is growing in quantity here and

some shows the branched heads of the male inflorescence, useful for definitive recognition.

Eurhynchium speciosum with toothed leaflet (inset) Photo Christine Rieser

In Burwell Wood *Eurhynchium speciosum* was recorded. This is very rare in Lincolnshire and is considered to be under recorded nationally as it is superficially similar to the very common *Brachythecium rutabulum* but can be distinguished by the coarsely toothed leaf margins.

At the LNU meeting at Owlet's Plantation a large patch of *Pogonatum aloides* was found and *Leucobryum glaucum* was recorded

A new site for *Leucobryum glaucum* was near Walesby Moor, were it was a chance discovery together with four species of *Sphagnum* and the liverwort *Calypogeia muelleriana*.

This has been a particularly good season for bryophytes perhaps because of the damp weather. At Rauceby Warren LNU meeting there was a luxurious growth of *Leskea polycarpa* on willows. This moss only grows in situations where the water level rises and falls periodically very close to the substrate, as here and on the River Trent banks. The low lying area at Rauceby where the liverwort *Riccia cavernosa* was previously recorded, was inaccessible as it was still flooded in August.

BUTTERFLIES

Allan Binding

Both 2007 and 2008 were poor years for butterflies. After the heavy rain and flooding in many areas in 2007, butterfly species were depleted in numbers so it was hoped that 2008 would bring some warm weather. Unfortunately this did not occur, the spring was quite cool and the summer was very cold. There were very few days of sunshine and almost no weeks of prolonged hot weather. In September the weather started to improve which helped many species that were still on the wing. By the end of October temperatures had started to drop quickly heralding the end of the butterfly flight season.

Spring 2008 started well with quite a few brimstone and orange tip butterflies seen although both dingy and grizzled skippers were down in numbers. Duke of Burgundy fritillary is struggling to survive at its only site in south Lincolnshire. The yearly egg count for this species was very poor. The species has not been helped by the bad weather during its flight time in the last few years. Many summer species had a poor year including brown argus which crashed in numbers in 2008.

A single chalk-hill blue was reported from Grimsthorpe Park by Chris Howes, the Park Warden. It is not known how this species came to be there; it could have been released by someone as no specimen of this species has been seen in Lincolnshire in recent years. A single silver-studded blue was photographed at Kirkby Moor LWT Reserve by Adrian Royle on the 13th July, again it is thought to have been released.

Both peacock and small tortoiseshell picked up in numbers towards the end of the summer, as did comma.

There were no Camberwell beauty or clouded yellow records received in 2008.

Next year (2009) will be the last of the five year recording period before the next update of the Butterfly Conservation distribution atlas is published, so please send any records you may have to me before November 2009 to have a chance of the data being used in the atlas update. Thanks to all the LNU members who have sent in records in 2008. So far I have received over 7000 records for 2008.

Since 2005 only 10 species of butterfly have increased in numbers, they are: brimstone, white admiral, red admiral, small tortoiseshell, peacock, comma, marsh fritillary, speckled wood, marbled white and grayling.

Since 2005 three species of butterfly that have decreased in numbers most are: small skipper, grizzled skipper and brown argus.

SHIELDBUGS

Annette Binding

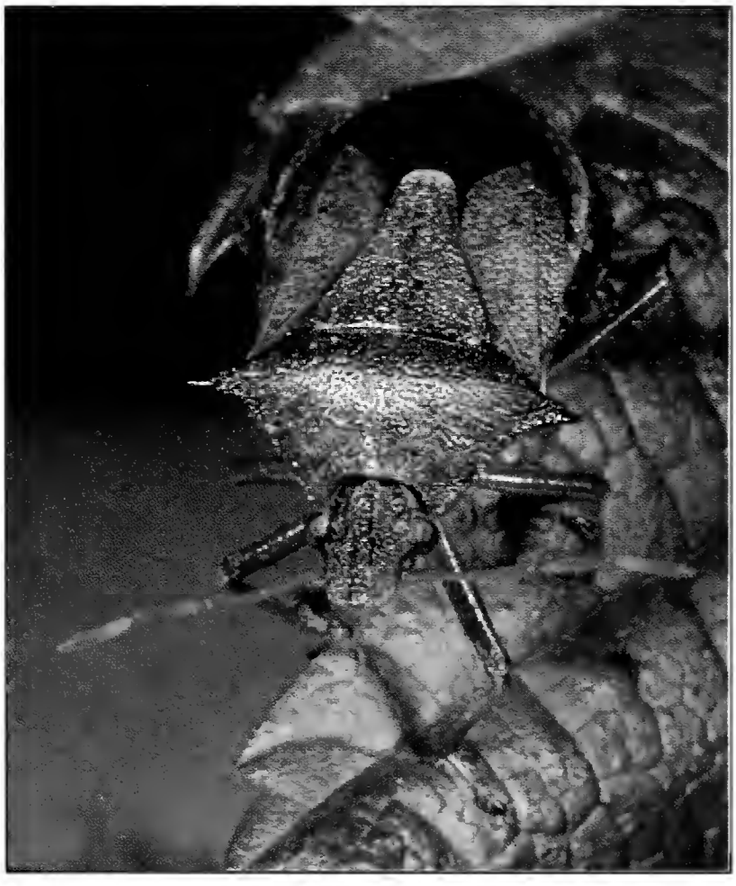
Shieldbug numbers were down in 2008, a trend which was noticed in other parts of the United Kingdom including Jersey in the Channel Islands. Only fifteen of the twenty-one species recorded in Lincolnshire were found in 2008 and six of those only had one record.

A single specimen of bishop's mitre *Aelia acuminata* was found at Riseholme, Lincoln on the 30th June by Martin Gray, a new site for this species which was new to the county in 2007.

Dolycoris baccarum and *Legnotus limbosus* were recorded by Colin Smith and Roger Labbett on the 10th May at the LNU meeting at Owlet Plantation, a new site for both species and the only records received for these species. There was also only one record of the pied shieldbug *Sehirus bicolour*. It was found in moss by Colin Smith on the 4th March at Newton on Trent, another new site record. Colin Smith found two specimens of *Podops inuncta* in moss at Donna Nook on the 21st March, the only record for this species in 2008. Colin also sent in the only record of *Elasmostethus tristriatus* from Chapel Hill Farm, Willingham Forest. He found two specimens on the 30th March.

The green shieldbug *Palomena prasina* continues to be the species with most records although even this species was down on last year.

Both the birch shieldbug *Elasmostethus interstinctus* and parent bug *Elasmucha grisea* are found on birch. Whilst birch shieldbug continues to be recorded in fairly good numbers, the parent bug has declined and I received only three records of this latter species in 2008.



Picromerus bidens
Photo R. Key

Adrian Royle sent in the only two records of *Picromerus bidens*. He found three nymphs at Chambers Farm Wood on the 28th June and one adult specimen at a new site for this species at Rimac, part of Saltfleetby–Theddlethorpe NNR, on the 14th September. *Picromerus bidens* prefers damp areas

and although widespread in the county, it is not common. I receive only two or three records each year.

Whilst most of the shieldbug species were down in numbers in 2008, the gorse shieldbug *Piezodorus lituratus*, although only recorded from nine sites, was reported by Adrian Royle who saw them in their hundreds on gorse bushes at Sea View Farm, Saltfleetby-Theddlethorpe NNR on the 13th September. He counted up to two hundred and sixty on the edge of a patch of gorse but thought there could be a few hundred more in other parts of the patch. They were mainly a mix of adults and 5th instar nymphs but there were also a few earlier instar nymphs present.

In recent years Colin Smith has been collecting spiders for me from mercury vapour and actinic light traps. In 2008 four species of shieldbug were also recorded at light. Hawthorn shieldbug *Acanthosoma haemorrhoidale and Eysacoris fabricii* were recorded at mercury vapour light and birch shieldbug *Elasmostethus interstinctus* and forest bug *Pentatoma rufipes* were recorded at both mercury vapour and actinic light traps.

Finally, the only species not yet mentioned, the blue bug *Zicrona caerulea* was recorded from three sites in 2008. Alison Brownlow found one at Whisby Nature Park on the 21st July, Adrian Royle recorded one at Chambers Farm Wood on the 10th August and I found six nymphs whilst doing survey work at The Jungle in Branston on the 14th July. *Zicrona caerulea* adults and nymphs feed on the larvae of *Haltica* species of flea beetle which are found on great willowherb and are usually found in damp places.

PSEUDOSCORPIONS

Annette Binding

In 2008 I became county recorder for pseudoscorpions in Lincolnshire as I occasionally come across these fascinating little creatures while searching for spiders and other invertebrates. Colin Smith who has been very successful in finding spiders for me also sent me several pseudoscorpions.

Pseudoscorpions are related to scorpions and spiders but as they are only 2mm to 4mm in length they are easily overlooked and quite difficult to find. Pseudoscorpions live in moss, leaf litter and soil. Like scorpions they are carnivorous and catch their prey with pincer-like pedipalps but unlike scorpions they do not have the stinging tail.

There are 27 species of pseudoscorpions in the United Kingdom and 13 have been recorded in Lincolnshire. I began with only 5 records. Allan contacted the national recording scheme organiser Gerald Legg who was able to send me a further 78 records. In 2008 Colin Smith sent me 7 specimens from 4 sites. He recorded *Chthonius ischnocheles* and *Dactylochelifer latreillei* at Donna Nook on 21st March. Both species were found in high tide litter. *Chthonius ischnocheles* is widespread in Britain and there are good numbers of records from across the

county although it had not been recorded at Donna Nook before. *Dactylochelifer latreillei* is a maritime species associated with marram grass *Ammophila arenaria* and sea couch grass *Elytrigia atherica* and can be found amongst the grass roots, under debris and drift wood. In Britain the species is found mainly on the east coast with some records from the south coast and one or two from Scotland. *Dactylochelifer latreillei* was last recorded at Donna Nook by H W Kew in April 1903.

Colin also found four specimens of *Neobisium carcinoides* in moss at Crowle Moor NNR on 30th January 2008 and one specimen of the same species at a lay-by on the A57 near Thorney on the county border on 4th March. *Neobisium carcinoides* is the commonest and most widespread species in Britain and occurs in many habitats from woodland to heathland, dunes and saltmarshes.

I now have a total of 87 records which date from 1877 to 2008.

SPIDERS

Annette Binding

One spider, *Enoplognatha latimana*, was recorded in 2008 which was new to the county. Colin Smith collected a single male at a mercury vapour light at Willingham Forest on 30th June. The spider is very similar in appearance to the much more common *Enoplognatha ovata* and can only be separated under the microscope. In the same batch of spiders collected at MV light on that day, there was a male *Enoplognatha ovata* and so I expected the second *Enoplognatha* species to be *Enoplognatha ovata* and was therefore very surprised to discover that the second male was *Enoplognatha latimana*, a species I had only previously seen on Anglesey, North Wales. *Enoplognatha latimana* has the same three colour forms as *Enoplognatha ovata*. The spider caught by Colin was the commonest cream form. The other two forms have either one or two red stripes on the abdomen.

There were a number of species recorded in 2008 which had few previous county records or which had not been seen in the county for many years. Most of these were Linyphids and many of them were sent to me by Colin Smith. Colin found a female *Pelecopsis parallela* in dead reeds at Frodingham Grange on 30th January, the second county record for this species which was new to the county in 2004 when M. L. Denton collected one in a pitfall trap at Scunthorpe; it was determined by Bruce Hoyle and I received the record from the National Spider Database in 2008. Also on 30th January Colin found two Linyphid spiders in moss at Crowle Moor NNR, *Ceratinella scabrosa* and *Gongylidiellum vivum.* It was the 3rd county record of *Ceratinella scabrosa* a species which had not been seen in Lincolnshire since 1960. There were eight previous records of *Gongylidiellum vivum* but this was the first record since 1971 and the first female recorded since 1951.

Colin found another Linyphid, *Centromerus sylvaticus*, in moss at Great West Wood and at Great Scrubbs Wood on the same day 19th February. These were the first records of this species since 1973.

I collected a single specimen of the Linyphid *Erigone promiscua* from under a stone at Gibraltar Point NNR on 25th July, the 3rd county record of this species.

Colin found *Troxochrus scabriculus* at Donna Nook on the 21st March and at Willwick Hill Plantation at Whitton on the 27th March. These were the fifth and sixth county records of this Linyphid which was last recorded in Lincolnshire by G. W. Whatmough in 1960.

Species other than Linyphids, which were recorded in 2008 included *Achaearanea simulans*. Allan beat a single female from bushes at Watts Wood LWT Reserve on the 16th July. It was the fourth county record of this species which is currently listed as Notable B although it will loose its status when the new review of British Spiders is published (Peter Harvey, pers. comm.).

Over the last few years Colin Smith has collected a large number of spiders at both mv light and actinic light traps and among those collected in this way in 2008 was *Episinus angulatus*. There were only four previous records. Colin collected males from three new sites, all caught at actinic light. These were Middle Rasen Plantation on the 24th June, Camshaw Plantation on the 10th July and Linwood Warren on the 22nd July.

Diaea dorsata Photo Roger Key

Another species collected by Colin in his actinic light trap was the Linyphid *Lepthyphantes alacris*. A single male was found in the trap at Dog Kennel Wood, Willingham Forest on the 26th April. This was the eighth county record and the first since 1991.

Two of the more colourful crab spiders were recorded from new sites in 2008. The bright green *Diaea dorsata* was found at Legsby Wood on the 5th May by Colin Smith. This spider has only been recorded from thirteen other locations in Lincolnshire. The large white *Misumena vatia* was found at Callan's Lane Wood

on the 1st June by John Lamin. This species has been recorded at eleven other locations.

Misumena vatia (page 111) Photo Roger Key

On 6th November Allan and I found another spider with very few records when we visited the Sir Joseph Banks Conservatory at the Lawn Centre, Lincoln to look at the plants. There were a large number of spiders' webs and although at first we could find no spiders we soon realised that they were disguised as debris in the webs. Allan managed to collect a couple of specimens which I later identified as *Uloborus plumipes*, a species which has spread in heated garden centres and conservatories since the early 1990's when it was probably introduced in pot plants imported from the Netherlands. Spiders of the Family *Uloboridae* are unique in having no poison glands so they have to rely on their skill at wrapping prey items in silk. I know of only five previous Lincolnshire records of *Uloborus plumipes*, four in the north of the county from Scunthorpe and Epworth and one from Gonerby near Grantham in South Lincolnshire. Since discovering the spiders at the Sir Joseph Banks Conservatory, we have looked for it at other garden centres but so far without success.

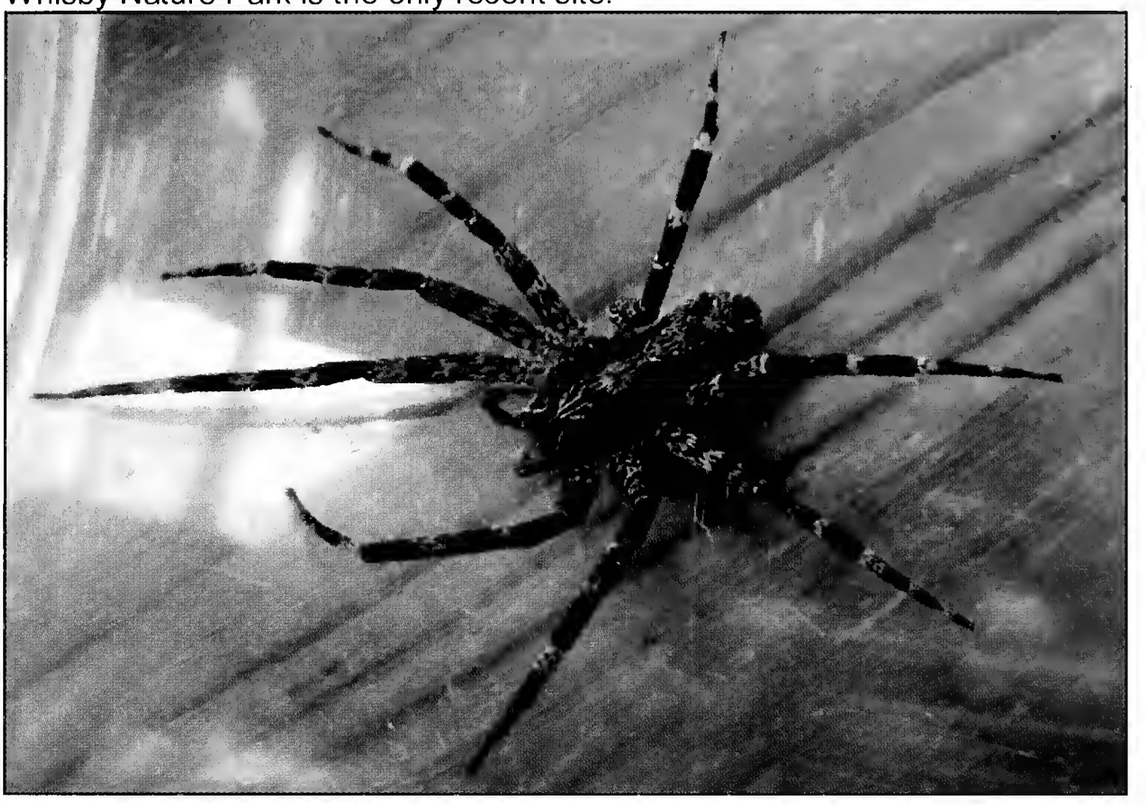
Colin Smith found a male *Zelotes electus* in moss at Donna Nook on the 21st March. It is a coastal species, found mainly on sand dunes. This was the tenth county record for this spider which is known from only three locations in Lincolnshire.

In grass litter at Gibraltar Point NNR on 24th September Colin found *Clubiona subtilis* and *Thanatus striatus*. *Clubiona subtilis* is known from only three locations in Lincolnshire, Donna Nook, Gibraltar Point NNR and Crowle Moors NNR. It was last recorded in 2006 at Crowle Moors but it had not been recorded at Gibraltar Point since 1985. *Thanatus striatus* had also not been recorded at Gibraltar Point since 1985. It is known from only five locations and the last record was from Messingham, North Lincolnshire in 1988.

As well as collecting many spiders himself, Colin Smith also encouraged one of his work colleagues Craig Hobson, to send me a spider which he found in his house in Lincoln on the 27th April, I identified it as a female *Amaurobius ferox*

which although fairly widespread in the county has very few recent records, this record being only the fifth since 2001.

Allan and I both found specimens of *Tetragnatha nigrita* at Whisby Nature Park in 2008. This spider is known from only three other locations in Lincolnshire but Whisby Nature Park is the only recent site.



Unidentified spider (possibly from Colombia). Photo Allan Binding

Finally, I found a female Lycosid in bananas bought at a local supermarket on the 24th April. It was about the same size as a *Pisaura mirabilis* and had probably been imported from Columbia where the bananas came from. Allan managed to take a few photographs of it before it suddenly just literally curled up and died. It is as yet unidentified and it may not be possible to identify it to species level.

I am grateful to all those people who have sent records and specimens to me in 2008 especially Colin Smith.

TERRESTRIAL BUGS EXCLUDING SHIELDBUGS

Colin Smith

The last published list for Heteroptera in Lincs was in 1988 when Peter Kirkby listed 220 of the 460 British species that where known to occur in the county.

Since then another 41 species have been added to the list. Two of those additions were made in 2008. The first, *Lygus maritimus,* I swept from sea lavender on the coast at Pyewipe near Grimsby on the 8th September. The other

was *Macrotylus paykulli* swept from restharrow at Rimac on the Saltfleetby-Theddlethorpe National Nature Reserve on the 21st July. Thanks to Alan Dale for two nice records from Low Hammeringham of *Phytocoris reuteri* with its distinctive banded legs on the 9th September and *Pseudoloxops coccineus,* a very pretty, red ash-feeding bug on the 29th September.

Thanks also to Roger Labbett who collected quite a few specimens for me from his moth trap. They included *Phoenicocoris obscurellus* on the 9th June, a small and obscure species that is seldom recorded and *Saldula saltatoria* (the shore bug) another small and elusive species on the 1st July, both from Kenwick Park, Louth.

Finally thanks to Allan and Annette Binding for their help and support and for collecting together many of the records currently on the database.

MOSSES, LIVERWORTS AND LICHENS

M.R.D. Seaward

The county's bryophyte and lichen floras, as mentioned in the previous report, continue to undergo a remarkable change, mainly for the better, as a result of the amelioration of air pollution, off-set by the rise in nitrogenous products derived from agricultural practices and animal husbandry. However, the improvement in the epiphytic bryophyte and lichen floras has not been mirrored in the case of our lowland heaths. One and a half centuries ago these were major features of our county, but their decline, as elsewhere in eastern counties, has been dramatic due to extensive drainage programmes in the late 19th century since when they have been 'nibbled away' by various agricultural and forestry practices (Seaward 1981). Even those heathlands designated as nature reserves have not been spared in respect of their bryophyte and lichen communities, and this author has noted with regret the decline in biodiversity and the demise of key taxa over the 50 years he has monitored these important sites.

Of particular concern is the almost complete disappearance of the lichen *Cetraria islandica* from Linwood Warren where its presence denotes the southern distribution in England of the former boreal flora dictated by the last Ice Age. This lichen was first noted here by F. Arnold Lees in December 1877; for three-quarters of a century it remained unnoticed until its rediscovery in March 1959, since when it has been monitored by the author, who on one occasion with the help of the British Lichen Society mapped its distribution (Seaward 1978). At that time *C. islandica* was spread over a total area of *c.* 210 m^2 with cover values within $4m^2$ quadrats up to 51-75% in two disjunct sites 20m apart and separated by a ditch (Seaward 1978, fig.1). However, over the years the author has noticed that what started as a steady decline has developed into a catastrophe, the LNU mycological meeting there in October 2008 revealing its presence in only a few spots within the previously monitored area where it covered in each case no more than a few square centimetres. Its status outside of this monitored area is unknown. However, this flagship species at Linwood Warren has no doubt suffered from over-exposure resulting from the publicity it has received through,

for example, being highlighted in published material and targeted on the information board near to the entrance of the reserve, as well as from a limited knowledge on how to manage such sites to the advantage of its terricolous bryophyte and lichen communities.

On the other hand, some reserves have proved highly favourable to the establishment of both epiphytic and terricolous bryophytes and lichens; this is exemplified by the lichen flora at Whisby Nature Park near Lincoln where a recent survey by the author has already shown there to be at least 15 terricolous lichens (mainly *Cladonia* and *Peltigera* spp.) covering relatively extensive areas of ground as well as interesting and diverse (for this part of the county) corticolous and lignicolous assemblages. The status of these species and the establishment of further species will be monitored during the next few years.

A further 14 churches (some redundant or adapted for a different purpose) and their churchyards, as well as one churchyard with a demolished church, were investigated for the first time and three churches were revisited by the author in 2008 as part of the British Lichen Society's churchyard survey; to date, 537, representing *c.* 78% of the Church of England churchyards in the county, have been researched.

The moss and liverwort records, contributed by B. Hedley, N.G. Hodgetts (NGH), S. Knight (SK), F.R. Lammiman (FRL), C. Rieser (CR) and C.R. Stevenson (CRS) are for 2008 unless otherwise stated. As a consequence of this bryological and lichenological work, nine county, six vice-county, 68 divisional and innumerable grid square records have been added to our registers. The lichen records, unless otherwise stated, were made by the author in 2008, who is most grateful to Dr B.J. Coppins, Royal Botanic Garden, Edinburgh, for his identification/confirmation of the more critical material. The bryophyte and lichen nomenclature is mainly according to Hill *et al.* (1998) and B.J. Coppins (2002) respectively. The author is also grateful to P. Porter for his support of the on-going lichen survey at the Whisby Nature Reserve.

Mosses

Bryum klinggraeffii Schimp. + 10 (NGH)
B. moravicum Podp. + 13 (CRS)
B. radiculosum Brid. + 10,14 (NGH)
B. subalpiculatum Hampe + 16 (2007, NGH)
Campyliadelphus chrysophyllus (Brid.) R.S.Chopra + 9 (FRL & CR)
Campylopus introflexus (Hedw.) Brid. + 15 (NGH)
Ctenidium molluscum var. *condensatum* (Schimp.) E.Britton + 8 (Burwell Wood, FRL & CR, **NCR**)
Dicranella staphylina H.Whitehouse + 10 (NGH)
Dicranum tauricum Sapjegin + 5 (FRL & CR)
Didymodon rigidulus Hedw. + 10 (NGH)
D. sinuosus (Mitt.) Delogne + 7 (FRL & CR)
Fissidens dubius P.Beauv. + 9 (FRL & CR)
F. gracilifolius Brugg.-Nann. & Nyholm + 15 (2007, NGH)
Gyroweisia tenuis (Hedw.) Schimp. + 9 (FRL & CR)
Hygrohypnum luridum (Hedw.) Jenn. + 16 (2007, NGH)

Leptobryum pyriforme (Hedw.) Wilson + 15 (NGH)
Orthotrichum cupulatum Hoffm. ex Brid. + 15 (2007. NGH)
O. stramineum Hornsch. ex Brid. + 15 (Griff's Plantation, Old Somerby, 2007, NGH, **NCR**)
Oxyrrhynchium speciosum (Brid.) Warnst. + 8 (FRL & CR)
Phascum acaulon var. *schreberianum* (Dicks.) Brid. + 15 (Belton Park, 2005, NGH, **NCR**)
Philonotis fontana (Hedw.) Brid. + 13 (SK) – last recorded from VC53 in 1915
Pohlia wahlenbergii (F.Weber & D.Mohr) A.L.Andrews + 13 (CRS)
Pseudephemerum nitidum (Hedw.) Loeske + 13 (CRS)
Pseudocrossidium revolutum (Brid.) R.H.Zander + 9,10,11 (FRL & CR)
Racomitrium fasciculare (Hedw.) Brid. + 10 (New Bolingbroke, NGH, **NCR**), 11 (FRL & CR)
Schistidium crassipilum H.H.Blom + 10 (Sibsey, NGH, **VCR**), 15 (NGH)
Sphagnum russowii Warnst. + 7 (Linwood Warren, 2007, NGH, **NCR**)
Syntrichia virescens (De Not.) Ochyra + 7 (FRL & CR),10 (NGH), 15 (Ingoldsby church, 2007, NGH, **VCR**)
Ulota bruchii Hornsch. ex Brid. + 14 (2007, NGH)
Weissia brachycarpa var. *obliqua* (Nees & Hornsch.) M.O.Hill + 13 (CRS)
W. squarrosa (Nees & Hornsch.) Müll.Hal. + 15 (Old Somerby, NGH, **NCR**)

Liverworts

Frullania dilatata (L.) Dumort. + 9 (FRL & CR)
Leiocolea turbinata (Raddi) H.Buch + 13 (Stapleford Woods, CRS, **VCR**)
Lunularia cruciata (L.) Lindb. + 5 (FRL & CR)
Marchantia polymorpha L. ssp. *polymorpha* + 14 (NGH)
M. polymorpha ssp. *ruderalis* Bischl. & Boisselier + 8 (FRL & CR), 14 (NGH)
Riccia sorocarpa Bisch. + 15 (NGH)
Scapania undulata (L.) Dumort. + 11 (FRL & CR) – last recorded from the county in 1938

Lichens

Arthonia radiata (Pers.) Ach. + 13
Buellia griseovirens (Turner & Borrer ex Sm.) Almb. + 11
Caloplaca arcis (Poelt & Vězda) Arup + 3 (Far Ing N.R., 2008, P.Swinhoe, **NCR**)
C. crenulatella (Nyl.) H.Olivier + 7
Candelariella reflexa (Nyl.) Lettau + 13
Catillaria lenticularis (Ach.) Th.Fr. + 6
Cladonia foliacea (Huds.) Willd. + 13 (on sandy mounds, Whisby N.R., MRDS, **VCR**)
Collema crispum (Huds.) F.H.Wigg. + 13
Flavoparmelia soredians (Nyl.) Hale + 15
Fuscidea lightfootii (Sm.) Coppins & P.James + 13 (on *Betula*, Whisby N.R., MRDS, **NCR**)
Lecanora carpinea (L.) Vain. + 7,15
L. hagenii (Ach.) Ach. + 13
L.pulicaris (Pers.) Ach. + 13 (on *Salix*, Whisby N.R., MRDS, **VCR**)
L. saligna (Schrad.) Zahlbr. + 13
L. symmicta (Ach.) Ach. + 13 (on *Betula*, Whisby N.R., MRDS, **NCR**)

P. didactyla (With.) J.R.Laundon + 13
P. rufescens (Weiss) Humb. + 13
Phlyctis argena (Spreng.) Flot. + 13
Physcia aipolia (Ehrh. ex Humb.) Fürnr. + 13 (on *Quercus* & *Salix*, Whisby N.R., MRDS, **VCR**)
Punctelia subrudecta (Nyl.) Krog. [s.str.] + 13
P. ulophylla (Ach.) Herk & Aptroot + 7
Ramalina canariensis J.Steiner + 15
R. fastigiata (Pers.) Ach. + 13

References:

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Hill, M.O., Blockeel, T.L., Long, D.G. and Rothero, G.P. (1998) *A Checklist and Census Catalogue of British and Irish Bryophytes*. British Bryological Society, Middlewich.
Seaward, M.R.D. (1978) Field meeting in north Lincolnshire. *Lichenologist* **10**: 111-122.
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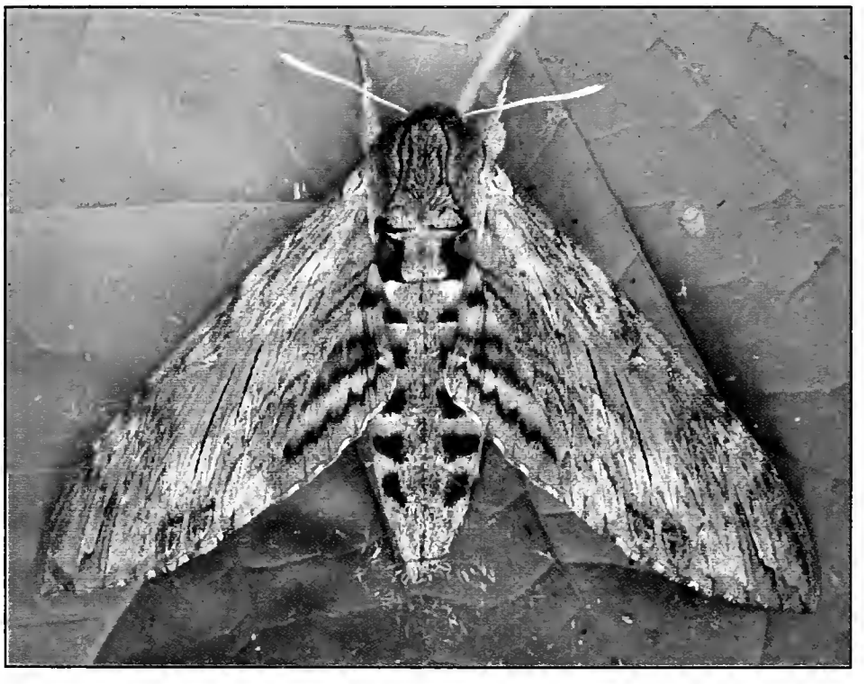
MOTHS

Colin Smith

Most recorders reported that 2008 was a poor year for moths but the species totals from many of them were still good. The numbers seen in the first half of the year were well below average but in July the weather picked up and catches were very good.



Convolvulus hawk moth
Photo M. Gray

Migrants were scarce with just four convolvulus hawk-moth *Agrius convolvuli,* five humming-bird hawk-moth *Macroglossum stellatarum* and nineteen dark sword-grass *Agrotis ipsilon*. Two great brocade *Eurois occulta* were seen, one at Linwood Warren 22nd July by Colin Smith and the other the following day at Muckton by Geoff Wright.

Adrian Royle found a yellow-legged clearwing *Synanthedon vespiformis* at Whisby at the end of June, the last specimen being recorded over a hundred years previously at Pelham's Pillar Wood. The Haworth's pug *Eupithecia haworthiata* found by Chris Dobson at Langworth was the first in the area for over 30 years. A Kent black arches *Meganola albula* caught in a garden on the outskirts of Scunthorpe is so far the farthest record from

the original colony at Gibraltar Point, the species having spread along the coast. It will be interesting to see if it moves down the Trent to Gainsborough.

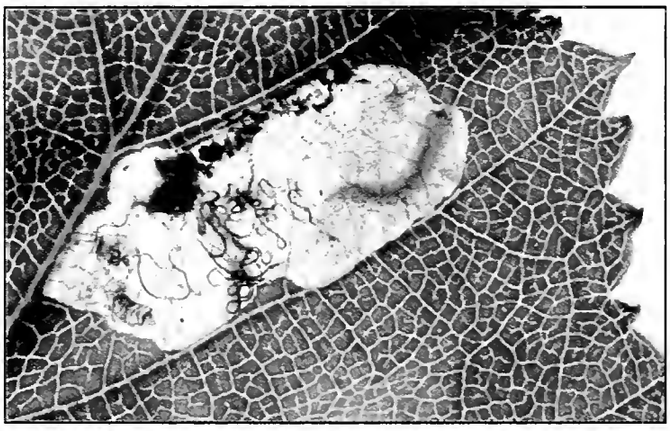
There were lots of pale pinion *Lithophane hepatica* records from across the north of the county suggesting that this once-rare migrant has now established itself in our woodlands. There were far more records for old lady *Mormo maura* and red underwing

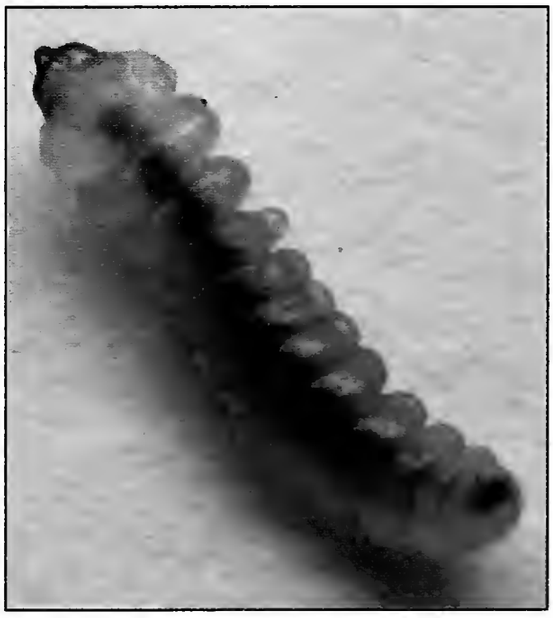
Pale pinion Photo R. Labbett

Catocala nupta, due as much to the increase in sugaring as to the species doing well. Annette Binding sent me four moths she found in a spider's web at Gibraltar Point; two were round-winged muslin *Thumatha senex,* one was the uncertain *Hoplodrina alsines* and the other looked like it may be *Chilo phragmitella*. As Roger Labbett had been doing some work on genitalia of the uncertain, I sent the moths to him to check it and asked him to also check the *C. phragmitella*. I was correct with the uncertain but the *C. phragmitella* was wrong and neither of us could identify it. Roger e-mailed a photo of the genitalia to some experts and Brian Goodey eventually confirmed it as the fourth recent record of the dotted fan-foot *Macrochilo cribrumalis*.

It was a very poor year for micros generally and there have been only five micros new to the county, mostly found by Martin Grey who did a lot of work on Eriocrania species in the spring finding one new species and rediscovering two not seen for over a hundred years by looking for the mines and identifying the caterpillars. The following are the most noteworthy sightings.

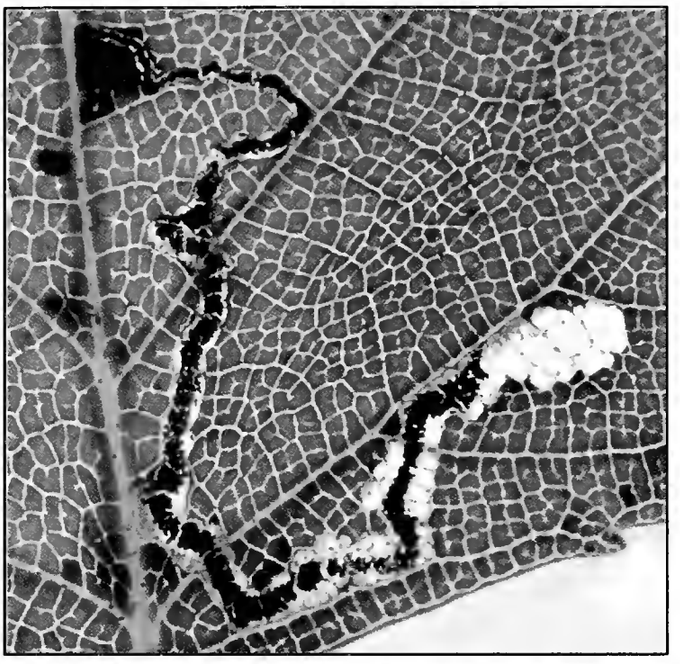
Eriocrania unimaculella not recorded for 100 years. There have been six records this year, all as larva. The one from Spring Wood on the 11th May by Martin Gray being the first for VC53.





Eriocrania salopiella leaf mine (left) and larvae (right). (p119) Photos M. Gray

Eriocrania salopiella Spring Wood on the 13th May by Martin Gray being the first for Lincolnshire and VC53 and College Wood on the 15th May by Colin Smith being the first for VC54.
Eriocrania cicatricella not recorded for 100 years. There have been five records this year, all as larva. The one from Spring Wood on the 9th May by Martin Gray being the first for VC53.



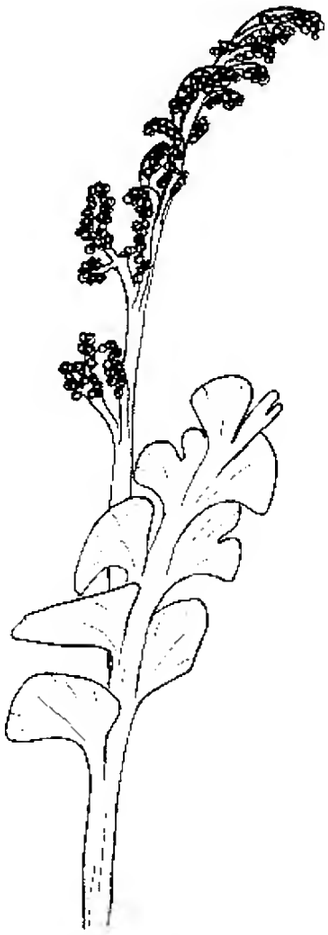
Stigmella sakhalinella leaf mine Photo M. Gray

Stigmella sakhalinella leaf mine at Kettlethorpe on the 24th June by Martin Gray, a new county record.
Luffia ferchaultella, Owlet Plantation on the 16th April by Martin Gray being the first for Lincolnshire and VC54 and Spring Wood on the 1st May by Martin Gray being the first for VC53.
Nemapogon ruricolella at Kenwick Park, Louth on the 1st July by Roger Labbett, a new county record.

Nemapogon ruricolella Photo R. Labbett

Caloptilia azaleella at Frampton on the 23rd July by Liz White, a new VC53 record.
Elachista subocellea at Chambers Farm Wood on the 2nd August by Colin Smith, a new VC54 record.
Biselachista utonella at Crowle Moor on the 17th June by Colin Smith, the second county record.
Gelechia rhombella at Frampton on the 22nd August by Liz White, a new VC53 record.
Ancylis upupana at Spring Wood on the 9th May by Martin Gray, a new county record.

Ancylis upupana (page 118)
Photo M. Gray



MYCOLOGY

Ken Rowland

At the risk of being accused of being repetitive I would say it has been a funny year fungus-wise. Quite a few species fruited quite early before the Foray season started and some species didn't bother much at all notably the Amanita, Russula and the Lactarius families, although thinking about it, all species were on the sparse side. Do we come back to climate change? The extra cold spell of weather in early December certainly stopped the small *Galerina mniophila* which have been fruiting in my lawn moss most of the year. In fact this has been the only species really showing this year.

Meripilus giganteus
Photo K. Rowland

Those of you who know Skellingthorpe will be aware of the row of oak and beech trees down Waterloo Lane. In early September I was asked to look at a fungus growing at the base of one of the beech trees it was, unfortunately for the tree, *Meripilus giganteus* which causes root rot. The local Council were informed, looked at it, and on the grounds of health and safety promptly condemned the tree. In November the tree was cut down. Looking at the stump, the actual rot in the trunk was minimal and unfortunately it was not possible to estimate when the tree would become in danger of falling due to loss of root anchorage. At the same time one of my favourite beech trees in Hartsholme Park which has been infected with *Ganoderma adspersum* for many years was also condemned; this fungus causes heart rot (it was at least 70% hollow). However this tree has now been pollarded, not felled, and the trunk left standing to provide habitats for many years to come. Based on observations at Clumber Park, a fallen beech trunk, say three to four feet in diameter, provides some twenty or more years of fungi and insect habitats as it is recycled and returned for further use by the higher plants. It will be host to some forty or fifty different fungi species over that period plus many thousands of insects.

Late in September my neighbour David Knight brought in two large specimens of *Calvatia gigantea* the giant puff ball (purely for identification purposes of course) from the Skellingthorpe area, but they were excellent when fried.

This year again I have had three specimens of the earth star *Geastrum triplex* appear in my garden. It appeared last year but I didn't speak of it as I was not sure that someone was playing a trick on me and planted them. However, this

The earth star *Geastrum triplex*
Photo K. Rowland

year's crop certainly were not planted (it turned out that neither were last year's). The leopard earthball *Scleroderma aerolatum* also appeared on one of the flower borders, probably showing the poor quality of the garden, so you never know what may turn up in your own garden. Just keep looking and report what you find.

The Annual LNU Foray was held at Linwood Warren, a site which normally provides a very rich hunting ground. This year some eighty four species were recorded, the best selection for any of the Forays I have led this year. There were 16 new site records. My thanks here go to Ray Halstead and Jackie Freeman for their assistance and records on this particular Foray. Probably the only species of real interest was *Amanita vaginata* and that not a very good specimen. Only a couple of *Amanita muscaria* were seen on a site which would normally have been covered. Also the Russula family were conspicuous by their absence.

Macrotyphula juncea (left) *Macrotyphula fistulosus* (rIght)
Photos
K. Rowland

Three species which I have recorded this year that haven't appeared for a number of years were *Macrotyphula fistulosus* at Birchwood Nature Park on fallen twigs. It looks like a thin, brown pencil sticking out of the grass about six inches tall. *Macrotyphula juncea* is somewhat smaller on leaves and *Typhula erythropus*, which is even smaller at just under an inch tall, on twigs. The latter

two were in Hartsholme Park. They may have been there all the time but it does seem unusual that they were all recorded in a year when other cap type fungi were in short supply.

Typhula erythropus Photo K. Rowland

Whisby Nature Park is usually an exceptionally good hunting ground in the Foray season. This year only 55 species were found, one unusual one that was baffling for a while was *Tricholoma cingulatum,* a new site record. It was unusual in that it is the only Tricholoma species that has a ring on its stem. Many of the usually common Lactarius and Russula species again were conspicuous by their absence together with the Boletus and Leccinum family. Two other new site records brought to me by Phil Porter (found by Jan Rouseau) were *Taphrina ametorum* (also classed as a gall) on *Alnus* catkins and a slime mould *Craterium minutum.* As its name implies this Myxomycete has a very small cup on a stalk, its overall size is about one millimetre.

Craterium minutum
Photo K. Rowland

Hartsholme and Swanholme were also very disappointing in the number of species found, some of the problem on Swanholme is probably due to illegal commercial collecting, as you probably saw in the local paper.

Even a foray in Chambers Wood for Forest Enterprise only realised 42 species which is a miserable total for this woodland area. In fact, some parts of the area were virtually devoid of fungus in a wood which normally up to a hundred species can be guaranteed. Weather conditions must be having an effect but it is difficult to pinpoint exactly what. My records do show that the rainfall over the past twenty years has increased significantly, especially in July and August, which may have some bearing on what is happening.

The question of how many species can be found on any particular site is often asked. At Hartsholme Country Park where recording has taken place for many years (the earliest records are from about 1900) we now have just under 500 species recorded, of which 54 records are for Myxomycetes due to the fact that Professor Bruce Ing (the British Myxomycete specialist) has visited the site on numerous occasions. A site near Kew has 3300 recorded species, undoubtedly largely due to its proximity to specialists at Kew. At Clumber Park (Nottinghamshire) where I have been recording for about twenty years, we have just under 600 species. Press and BBC reports this year noted new British records including "truffles" found during a visit to Clumber Park by the British Mycological Society (truffles have been found here in the last two years but not publicised for security reasons).

This points to the fact that there are some 4500 visible fungi and probably a quarter of a million others. Different people (I won't use the term specialist) will have interest in and identify different families; my own interest tends to be in the Ascomycetes, that is, the cup fungi, which includes the powdery mildews. Another interesting point here is that neither Hartsholme or Clumber Park are ancient woodland sites. Both were created in the early- to mid-1800's so possibly they still have a long way to go. Sites like Whisby and Swanholme are less than fifty years old and so certainly have a very long way to go. Whisby has been interesting in that we have watched it develop from a gravel pit to a Nature Park in about twenty years.

Every year I receive from Ann Ward, who lives in Nottinghamshire, a list of fungi that she records at Saltfleetby-Theddlethorpe NNR when she is bird ringing. This year has been no exception and has included four earth stars including *Geastrum fornicatum, G.coronatum, G.striatum* and *G.triplex*. She has also commented that only about 75% of the normal number of fungus species were recorded, which is about the same figure we have been experiencing.

Earlier in the year there have been six cases of fungus poisoning in the British Isles, four in Scotland where they mistook some *Cortinarius speciosissimus* for chanterelles and the victims suffered kidney failure. I am not sure about their state of health at the moment but the last time some students, again in Scotland ate the same fungus some fifteen years ago they were on kidney dialysis for about eighteen months. The second case was in the Isle of White where two ladies somehow managed to collect some death caps *Amanita phalloides* (the most deadly of all fungi) which they ate. One of these ladies unfortunately did not survive; again I am not sure what happened to the other person. In the case of the Scottish episode, it was known fairly quickly what had been eaten but in the case of the Isle of White case it was some days before the offending fungus was established, they having eaten the evidence. Which brings me to the edict I always use 'If you want to eat wild mushrooms always have three specimens, one to eat, one for the hospital and one for the coroner' and never eat wild mushrooms raw. If you are not sure what you have picked, don't eat them, go and buy some from your local supermarket.

I feel that the time has now come for me to hand over the job of recorder to a new face. I have one person in mind (Ray Halstead, 'the man with the hat') who has agreed, that with the assistance of Jackie Freeman, to take on the job. I thought it

better to hand over while I can still be of some help, not as happened in my case when Jack Houghton regrettably died in 1995 leaving me to try to sort out how it was done. I know that there are several thousand records of his which it is now impossible to unravel and this is a situation I don't want to happen to my successor. I have enjoyed doing the recording work and will still carry on with some Foray work where possible and hopefully to assist with identifications, but the floor gets further away each day, each hundred yards seems like half a mile and the slightest slope becomes a mountain, making it difficult on some sites, . also one's memory fails to remember names of species let alone the names of members present. Another valid point for me to retire is that we are now getting to the situation were species differ only in very minute detail, very often needing DNA testing, and this is an area I do not wish to enter. This year the *Russula* family has been increased from 120 to 160 in many cases differing in very small characteristics that are not always possible for the amateur mycologist to detect, even under the microscope. I graduated from the old school of 'splitters and lumpers'. I am of the lumper family which doesn't fit with modern day thinking.

My thanks have to go to Ray Halstead for his nearly two hundred records, Jan Rousseau, Jackie Freeman, Colin Faulkner Keith Robertson and others for their records and support at various Forays over the years, also I must not forget Phil Porter and David Knight who have kept me supplied with specimens to identify, as in previous years.

IRENE [RENE] WESTON (1930 – 2008)

Mark Seaward

With the death on 9 July 2008 of Rene Weston at the Borders General Hospital in Melrose, the county lost one of its leading botanists, whose association with the LNU spanned almost half a century. Rene was born on 30 January 1930 at Gelli, Pentre in the Rhondda Valley; her father, Walter Daniels, was a coal miner and her mother, Irene Jane, rather interestingly had 'a detailed knowledge and large collection of fossil plants from the coal measures'. From 1941 to 1947 Rene attended the Rhonnda County School for Girls at Porth, Pontypridd, where her Headmistress noted she had a 'marked aptitude for science studies'. After gaining her Higher School Certificate in Chemistry, Botany and Zoology she gained a place at University College Wales at

Rene Weston in Riseholme College grounds, late 1990s.
Photo Mark Weston

Aberystwyth, graduating as 'one of the best students of her final year' in 1950 with an honours degree in Botany, with subsidiary Zoology and Chemistry. After graduation she was appointed as Scientific Assistant in the Cytology Section of the Welsh Plant Breeding Station, during which time she met Ray Weston, who was studying at University College Wales, whom she married in 1954. In 1951 Rene was appointed Demonstrator in the Department of Botany at University College South Wales in Cardiff, where she remained until 1954; she was described as 'having a striking personality and a charming manner', with 'a really excellent knowledge of genetics'. From 1954 to 1958 she was a part-time lecturer in Biology at the Winmarleigh College of Agriculture in Lancashire, receiving the princely sum of 12/6d (62p) per hour. Her two sons, Peter and Mark, were born in 1958 and 1962 respectively. After moving to Lincolnshire in 1960, her husband was appointed to the Lindsey College of Agriculture at Riseholme. Over the next two decades or more she lectured on botany on a part-time basis for Riseholme College, WEA and the Extra-mural Department of Nottingham University, during which time she gained a Postgraduate Certificate of Education from Huddersfield College. Her adult education classes were greatly appreciated by a wide body of students, not only winning her many close friends, but also making 'a high contribution to the pool of amateur botanists and naturalists in Lincolnshire'. According to one of her students 'Rene's classes became more of a Botanical Club. She introduced many of us to the beauty of, and interest in, British plants. Her knowledge, enthusiasm, patience and kindness to us, mainly beginners, were unbounded. She went to great lengths to arrange and organise many field trips...Rene seemed to have contacts everywhere with local botanists who all had high regard for her. She was one of the nicest people I have met, and I, like many others, owe her a massive debt for fostering a lasting interest and love of plants'.

Rene became a member of the LNU soon after her arrival in the county, and was immediately conscripted into botanical recording, her work in the county at this time duly recognised by Joan Gibbons in The Flora of Lincolnshire (1975): '[her help has been] invaluable in the later stages and I am deeply indebted to her, particularly in connection with the chapter on Major Habitats, the appendix on Aliens and the Bibliography'. In 1977 she became the LNU Phanaerogamic Botany Secretary (jointly with Joan Gibbons) and her first botanical report (again jointly with Joan Gibbons) appeared in 1983; from 1985 until 2005 she was solely responsible for its preparation. During this time she was twice elected President of the LNU in 1968 and 2000, as well as being the leader of innumerable field meetings, serving on various of its committees, including the Executive. She also served on the Executive of the Lincolnshire Naturalists' Trust and was an active member of the Wild Flower Society and the Botanical Society of the British Isles, being the Vice-county Recorder for North and South Lincolnshire (1982-2001 & 1981-2006 respectively), as well as helping considerably in accumulating information on scarce and endangered plants and contributing to the Red Data Book and the New Atlas. The modest list of publications below does not do justice to her contribution to our knowledge of the Lincolnshire flora.

On a personal note, I found her an excellent field botanist, besides being delightful company; she had a passionate interest in the future of the LNU's collections, particularly its herbarium, and supported me in my endeavours to secure its future. She will be missed by many.

[I am most grateful to her sons Peter and Mark Weston and her student Alex Parker for their generous help in the compilation of the above, particularly those passages in quotation marks.]

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Trans.Lincs.Nat.Un. **21**: 75-89 (1985), 116-127 (1986), 158-167 (1987); **22**: 17-27 (1988), 93-96 (1989), 153-155 (1990); **23**: 19-23 (1992), 146-149 (1994); **25**: 41-47 (2000), 174-177 (2001), 237-239 (2002); **26**: 44-48 (2003), 129-133 (2004); 197-203 (2005).

Plant Notes / Botanical Notes:
Trans.Lincs.Nat.Un. **19**: 74 (1977), 141 (1978), **20**: 82-83 (1981), 114-116 (1982); **21**: 28 (1984); **22**: 156-158 (1990), 208-209 (1991); **23**: 83-85 (1993), 150-152 (1994); **24**: 113-115 (1997), 183-186 (1998), 250-252 (1999).

Field Meetings:
Trans.Lincs.Nat.Un. **24**: 133-134 (1997), 200-202 (1998).

Obituaries:
Winifred Heath *Trans.Lincs.Nat.Un.* **22**: 124-125 (1989).
E. Joan Gibbons *Trans.Lincs.Nat.Un.* **22**: 126-127 (1989).
Elizabeth Vyvyan Pennell *Trans.Lincs.Nat.Un.* **23**: 229 (1995).
Elizabeth Joan Garlick *Trans.Lincs.Nat.Un.* **24**: 136 (1997).
A. Denis Townsend *Trans.Lincs.Nat.Un.* **25**: 136 (2001).

W. Marson Peet *Trans.Lincs.Nat.Un.* **25**: 255-256 (2002).

BATS 2007

Annette Faulkner

It was not possible to compile this report in time to meet with last year's deadline.

The numbers of bats found during winter surveys of hibernation sites were within the normal range and species, and the barbastelle B*arbastella barbastellus* returned to its site near Louth, where it had been recorded the previous February.

Once bats were out of hibernation in mid-March the season progressed normally, with a few casualties in March/April and then a lull until the breeding season started in the middle of June. This coincided with a period of prolonged wet weather and the Bat Group soon started getting calls from the public about wandering baby bats. This continued for the next two to three weeks with, on two days, the phone ringing non-stop as yet more babies were found.

The Bat Group gets calls about a small number of lost or abandoned babies every year, and for many years attempts have been made to hand rear them if they cannot be returned to the roost – as is usually the case. But here we were getting calls for not one, but five or six babies at a time. Usually the roost has been abandoned, but we were finding that the mothers were mostly still there, so all we could do was return the babies to the roost and hope the mothers were still able to feed them. Attempts were made to hand rear some that couldn't be returned, mostly unsuccessfully, and we heaved a collective sigh of relief when the season moved on and the infants started to grow up – only to have a mini repeat in early July when young juveniles started getting into trouble. Most of these were either returned to the wild or successfully hand reared to maturity and permanent care in captivity, to be used for shows and events as 'PR' bats.

There are a number of probable reasons for this state of affairs, too complex (and much unknown) to go into here, but largely, we suspect, to do with the mothers being unable to forage. There seemed to be a distinct bias along the east side of the county and the species involved were virtually all common or soprano pipistrelle *Pipistrellus pipistrellus and P. pygmaeus*, but we also had three young Natterer's *Myotis nattereri* brought in – a most unusual occurrence.

Routine survey work continued throughout the season, with more work done at Grimsthorpe Park on the barbastelle colony there, and in the Limewoods, where a bat box scheme was being expanded in Chambers Farm NNR, and where barbastelles are being found in small numbers in many of the woods, though neither type of woodland fits the classic description of barbastelle requirements, based on the once definitive work done at Ebernoe Common in Sussex by Frank Greenaway (2001).

Reference

Greenaway, F. The Barbastelle in Britain British Wildlife *British Wildlife* Vol. 12 No. 5 June 2001 pp327-334

FIELD TRIP REPORTS 2008

Owlet Plantation Woodland Trust Reserve SK 825 924 10th May 2008 Afternoon and evening session (bats and moths). Brian Hedley

Attended by 13 people during course of day/evening in very warm and dry conditions.

At least 80 moth species were recorded; species included least black arches, orange footman, green silver-lines, may highflyer, pebble hook-tip, purple thorn and scalloped hazel. Eight butterfly species were noted including holly blue, speckled wood, small copper, brimstone, orange-tip and comma. Other invertebrates seen included six ladybird species, green tiger beetle, a scarce solitary wasp (*Andrea tibilalis*) and a rare spider wasp (*Priocnemis coriacea*).

At least 30 bird species noted including lesser redpoll, tawny owl, jay, cuckoo and green woodpecker. Other vertebrates included common lizard and five bat species. Plants included hard fern, lady fern, bog pondweed, field mouse-ear, pill sedge and heath speedwell. Bryophytes included *Pogonatum aloides*, *Leucobryum glaucum* and *Sphagnum denticulatum*.

Lea Marsh SK 8186 1st June 2008 Brian Hedley

Five people attended this rain-threatened meeting but in the end it kept dry. It was a botanically-biased meeting primarily aimed at looking over the SSSI.

Narrow-leaved water-dropwort Oenanthe silaifolia was found in good numbers (eventually) but despite careful searching of most suitable spots no mousetail *Myosurus minimus* could be found. The mousetail may now be lost from its only known Lincolnshire location. Other plants noted in the SSSI and adjacent fields included common meadow-rue, wood club-rush, smooth brome, garden angelica, tubular water-dropwort and pepper saxifrage.

Forty-eight bird species were noted including a pair of treecreepers, lapwing, curlew, barn owl, tree sparrow and bullfinch. Signs of water vole and roe deer were noted.

Tothill TF419812 5th July Chris Manning

At perhaps the grandest location of the year, Roland Smith and his family opened the 17th century manor house and provided refreshments; the house provided a welcome refuge on a day of torrential rain. The adjacent motte-and-bailey castle and river Great Eau provided a mosaic of habitats to investigate before we moved on to Tothill Wood. Highlight of the meeting were undoubtedly the water-violet *Hottonia palustris* growing in drains beside the Eau and some 120 herb-paris *Paris quadrifolia* in the wood. Broad buckler-fern *Dryopteris dilatata* and common ivy *Hedera helix subsp. Helix* were growing in bark fissures in trees around the house.

Cocklode and West Woods TF1076 and TF1176 7th September Anne Goodall

Thanks (?) to a fortunately entirely incorrect weather forecast, only 12 members attended this meeting, braving a beautifully warm sunny day in one of the less visited larger blocks of the Limewoods. The wood also proved to be rather drier than it can be, so bryophytes and fungi were less interesting than had been hoped with no new or unusual species recorded. However, respectable plant and bird lists were produced, and good numbers of butterflies and dragonflies were also seen. This group of woods is particularly interesting for the variety of stock types and management, from 'research natural' high forest and active coppice rotations to under-planted ancient woodland, now being restored, and even some conifer plantation which has its own interest; sadly, the crossbills arrived about a month late for our meeting.

ERRATA

Michael Archer's article in Transactions of the Lincs. Nat. Union Vol. 27, Part 1 2007 should have been numbered as 3, not 4 as stated:-

The bees (Hymenoptera: Aculeata) of Watsonian Lincolnshire. 3. Mining Bees, *Andreninae* Michael E. Archer 17

TRANSACTIONS OF THE LINCOLNSHIRE NATURALISTS' UNION

Officers of the Union in 2008
(Year of election to the Executive Committee)

President Colin Smith (2001)
President elect Chris Manning (2001)
Honorary Secretary Margaret Haggerty (2006)
Honorary Treasurer Ian MacAlpine-Leny (2001)
Membership Secretary via LWT
Publicity Secretary Vacant
Programme Secretary Ashley Butterfield (2006)
Sales Secretary Colin Smith (2001)
Transactions Editor Nick Tribe (2004)
Auditor Emma Murray (Nicholsons)

Executive Committee Ian Cappitt (2005), Richard Chadd (2002), Brian Hedley (2007), Christine Rieser (2005), Phil Porter (2008).

External representatives Ken Rowland (Swanholme Advisory Group), Richard Chadd (Lincolnshire Wildlife Trust Biodiversity Team and Local Wildlife Sites Panel), Ian MacAlpine-Leny (Lincolnshire Biodiversity Partnership and Lincolnshire Bird Club).

Section Recorders

Ants, wasps & bees Dr Michael Archer	**Bats** Mrs Annette Faulkner
Beetles Dr Roger Key	**Bryophytes/lichens** Professor Mark Seaward
Butterflies Mr Allan Binding	**Dragonflies** Mr Richard Chadd
Fish Mr Nick Bromidge & Mr Ian MacAlpine-Leny	**Flies** Mr Andrew Godfrey
Freshwater invertebrates Mr Richard Chadd	**Fungi** Mr Ken Rowland
Grasshoppers, etc. Mr Brian Redman	**Geology** Mr David Robinson
Higher plants Mr Paul Kirby	**Isopods & myriapods** Mr Neil Pike
Macro moths Mr Colin Smith	**Mammals** Mr Chris Manning
Micro moths Mr Colin Smith	**Molluscs** Mr John Redshaw
Plant Galls Mr Graeme Clayton	**Pseudoscorpions** Mrs Annette Binding
Sawflies Dr David Shepphard	**Spiders** Mrs Annette Binding
Shield bugs Mrs Annette Binding	**True bugs** Mr Colin Smith

SECRETARY'S REPORT

Margaret Haggerty

2008 has been another successful year for the LNU, with membership still edging up. The Executive Committee met four times over the year, and there were seven field meetings held around the county.

July saw the sad death of Rene Weston. She was one of the county's leading botanists, and had been involved with the LNU for nearly 50 years. She was President in 1968 and 2000, and was the Vascular Plant recorder for 30 years, before retiring last year.

The LNU continues to have active representation within other organisations, including Lincolnshire Biodiversity Partnership, Lincolnshire Bird Club Committee, LWT Biodiversity Team and the Local Wildlife Sites Panel.

Along with the seven field meetings planned for 2009, there are also other opportunities for LNU members and recorders to get out and about, both at BioBlitz recording events, and meeting the public at the Lincolnshire Show and the new Wild About Lincolnshire event.

The indoor and outdoor meetings and events are an excellent opportunity to raise the profile of the LNU, and encourage more people to join and take part in biological recording.

Meetings in 2008

Saturday 12th January	Talk by Brian Eversham 'Introducing ground beetles'
Saturday 9th February	Recorders' meeting
Saturday 8th March	LNU AGM and Presidential Address from Colin Smith 'Moths and moth recording'

697th field meeting	Sunday 13th April	South Elkington
698th field meeting	Saturday 10th May	Owlet Plantation
699th field meeting	Sunday 1sy June	Lea Marsh
700th field meeting	Saturday 5th July	Tothill motte and bailey
701st field meeting	Sunday 3rd August	Rauceby Warren LWT reserve
702nd field meeting	Sunday 7th September	Great West Wood and Cocklode Wood
703rd field meeting	Sunday 19th October	Linwood Warren

Saturday 6th December	Talk by Phil Porter 'Whisby Nature Park – the last five years'

Stratiomys potamida (Page 71) Photo R. Key

Contributing to *The Lincolnshire Naturalist*

We are constantly on the lookout for full length articles or short notes, even a few lines which can be useful space fillers, on any aspect of our natural history, current or histori Consider a note in *The Lincolnshire Naturalist* for any new or significant observations. Articles should be typed. It would help the editor tremendously if they could either be e-mailed or sent on CD or floppy disk with accompanying paper copy, in Word© or Worc Perfect© format. Drawings, colour or black & white photographs, colour transparencies negatives (please include a print) can be included. If you submit your own photograph take them or scan them at a resolution of at least 200 dots per inch and at a size equal or larger than the size they will be printed at (approximately 11.5x7.5cm). Colour illustration may be rendered to black and white. Please give a caption. Illustrations will returned and edited text resubmitted to the author for approval and proof-reading befor publication.
Convention adopted for names - Latin names should be *italicised*, **not** (bracketed) nor underlined and should follow the English name (where applicable) with no separating comma. English names should start with lower case letters unless incorporating other names warranting capitalisation (eg Brandt's bat).

References to journals and books should please be as below. Please note and use the capitalization and italic convention.
WOODRUFFE-PEACOCK, Rev E.A., 1900. The Lincolnshire Naturalists at Freiston. *T Naturalist*, **25**: 141-144.
DUDDINGTON, J. & JOHNSON, R. 1983. *The Butterflies and Larger Moths of Lincolnshire and South Humberside*. Lincolnshire Naturalists' Union. Lincoln. 299pp.

The final copy date is **31st March** of the year in which the Transactions are to be issue Please contact the editor directly if there is difficulty in meeting this deadline. If in any doubt as to whether your observation merits a note or an article, or you have any other queries please do get in touch with the editor c/o Lincolnshire Naturalists' Union, Lincolnshire Wildlife Trust, Banovallum House, Horncastle, LN9 5HF to whom texts should be sent. A guidance note is available and is sent out to recorders. Otherwise, please attempt to imitate the format in this issue of the Lincolnshire Naturalist.

EDITORIAL

Nick Tribe

Thanks are due to the LNU Executive for agreeing to the transition of The Lincolnshire Naturalist to a full colour production. The reception from LNU members has been overwhelmingly positive and all seem to agree that the extra expenditure has been worthwhile.
Hopefully this year's offerings will be up the usual high standard. One particularly pleasing development has been that experts from outside the LNU have been prepare share their knowledge of the county's wildlife with us; I will draw attention to Chris Randall's paper on spined loach and Nick Kite's paper on water vole (2007) in this rega Once again, an enormous 'thank you' is due to all the contributors, both for their article and photographs. In turn, all recorders are keen to express their thanks to all recorders please keep those records coming!
Finally, a quiet plea to all recorders. If you find something nice, please take a photogra of it; some articles are easier to illustrate than others.

THE LINCOLNSHIRE NATURALIST

including

Transactions of the Lincolnshire Naturalists' Union for 2008

Volume 27, Part 2, 2009

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cover picture *Oecophora bractella* (A Limewoods speciality) photo Colin Smith

Line illustrations courtesy of Natural England