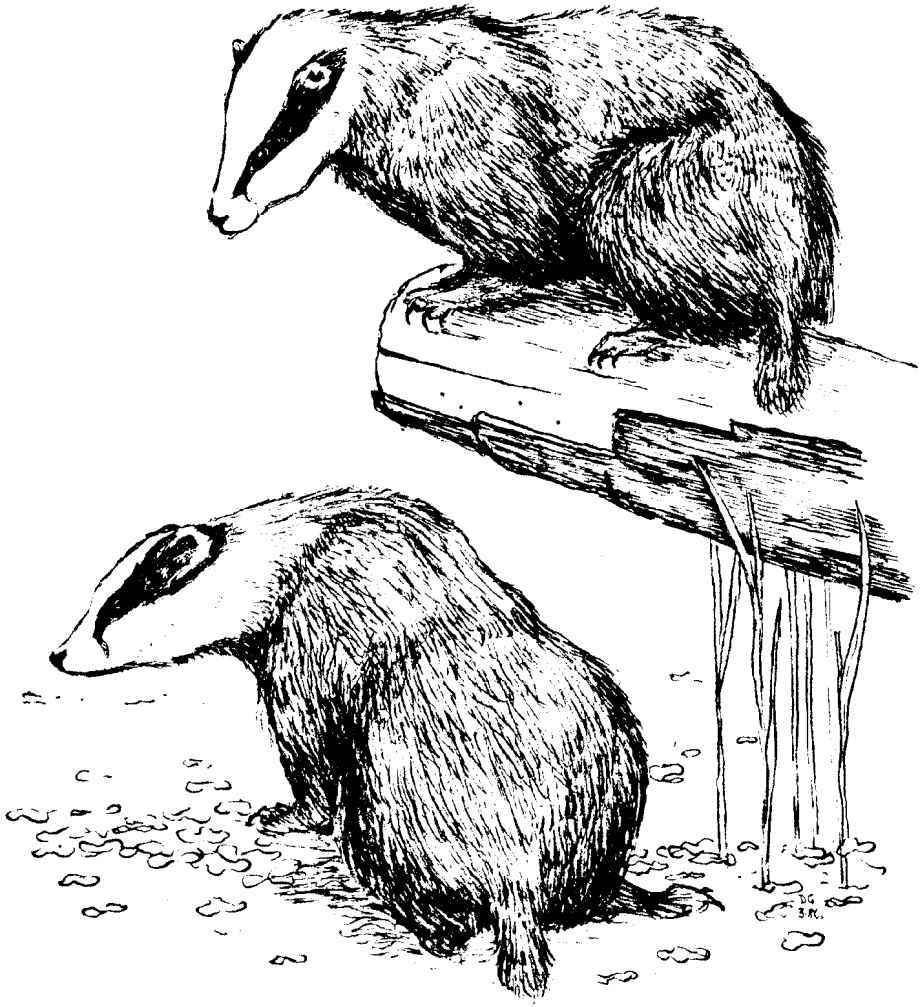
THE DONCASTER NATURALIST



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EDITORIAL

After the severe temperatures of February(the experts tell us they were the lowest since 1963,but not as low as the recorded temperatures of February 1947),what a pleasure to see the Spring flowers coming into bloom,and feel a little warmth from the sun.

I hope that this issue of The Doncaster Naturalist will prove to be uplifting to all our readers,and that many of our members will take part in Ted Rimington's Butterfly Survey.

Most members of the Society will know that George Hyde died recently. He was a member of the Doncaster Naturalists' for many years,and its President three times.As a Society we extend our sympathies to his widow,Mrs.Kathleen Hyde. George was a nationally-known naturalist of the highest calibre,and the Society has been privileged to be connected with him.I hope that we shall be able to have an appreciative article on his life and work in our next issue.

Dorothy Bramley,Editor.Mar.18th.1986
29,Cantley Lane,Doncaster.

RIVER DON GETS SEAL OF APPROVAL

C. A. Howes

Unlike the Tees estuary, which until the late 19th century supported a major Common Seal (Phoca vitulina) breeding colony (about 1000 animals at one estimate, the Humber and its major tributaries seem never to have attracted more than a few isolated stragglers. Indeed so scarce have they been that the few individuals which over the years ventured into the Humber/Ouse system were treated as curiosities or celebrities (depending on whether they were killed or not).

The earliest allusion to seals in the Humber tributaries in fact one of the earliest of any provenanced Yorkshire seal records is from Abraham de la Pryme, the celebrated 17th century antiquary of Hatfield who, in his diary for 1687 notes:-

> "at Fishlake, there came up there to in the river (Don) near fifty miles from the sea, sea dogs, a he and a she..."

Almost two centuries later in 1888, Thomas Bunker, the famour Goole naturalist, reported that:-

> "a short time ago a large seal made its appearance in the Aire at Rawcliffe (SE/6823) having come up the Ouse. It was first seen passing through Hook Bridge. After rounding Howden Dyke, it was lost sight of, but reappeared in passing Boothferry, and was followed from Airmyn to Rawcliffe by a crowd of people on the banks. At Rawcliffe it was shot (!) and it afterwards drifted with the tide towards Howden Dyke Sands where it stranded. It was found to be a large dog seal, measuring six feet from nostrils to tail. It was skinned by some villagers, and the skin had no defect but the gunshot wound".

On 4th September, 1909, an adult female common seal, measuring 4 ft. 3 in. in length, 2 ft. 6 in. in girth and weighing six stones journeyed up the Trent to

Hazelford Ferry (SK/7148) where, like the Rawcliffe specimen 21 years before, it was shot. The corpse was secured by the proprietor of the local hostelry who had it stuffed. A photograph of the rather fine mounted specimen formed the frontispiece to the Nottingham Naturalists' Society Annual Report for 1908-9.

Since the 1950's the major North Sea common seal breeding colony in the Wash,and the grey seal (Halichoerus grypus) colonies on the Farne Islands have steadily increased. Consequently the number of seal sightings in Yorkshire waters has also increased. In recent years, a small breeding outpost of both species has established at Donna Nook, south of Cleethorpes, a development which has probably been responsible for the recent boost in Holderness and Humber area records.

In late September/early October, 1953, large crowds of people gathered to watch a 4 ft. common seal which had come up the Trent and had managed to swim through the sluice gates at the mouth of the river Idle at West Stockwith (SK/7894). The seal fed well on eels which it obligingly carried to the bank to ear.

In October 1973, another was reported by anglers higher up the Trent at Cromwell Lock (SK/8061) and from the late 1970's seals became fairly regular visitors to the Trent Falls area (SE/82), with individuals occasionally making excursions higher up the Ouse tributaries e.g. a common seal spent February, 1984 in the Wharfe at Tadcaster.

Seals also began to discover the artificial outfall of the Don adjacent to Goole Docks. In 1981, a common seal explored upstream as far as Kirk Bramwith, spending part of September near Bramwith Bridge (SE/6211). Local farmers, villagers, even the district nurse, stopped to watch it either swimming in the turbid water or hauled out, sunning itself on a plank on the embankment . (Personal comment Mrs M. Teasdale)

In September 1983 a common seal again ascended the Don this time escaping the influence of tidal waters, reach-

ing Marshgate, Doncaster(SE/5603). Its progress further upstream was prevented only by the power station sluice gates. A photograph of this intrepid explorer taken from the premises of Marshgate Tyre Services appeared in the Doncaster Star, 9.9.1983.

The most recent, best documented and perhaps most interesting occurrence is of a common seal pup which, on 15th July, 1985 mysteriously appeared near Thorpe Marsh Nature Reserve in the canalised and steeply embanked section of the Ea Beck between Thorpe Marsh Power Station and the huge fly-ash tip (SE/598097). A variety of newspapers, local and national, showed an array of photographs, and printed various permutations of the action - with the R.S.P.C.A. being called to the 'rescue' and Y.W.T. warden Paul Johnson stealthily capturing the seal, the sound of his commando style approaches masked by the rumbling of a passing train. The bemused pup, after being much photographed in the arms of Mr Johnson and Mr Tony Price of the R.S.P.C.A. was taken for a bath and a meal of raw fish to Mr Price's home, before being sent to 'convalesce' at a seal sanctuary in Kings Lynn.

Sadly the newsworthiness of the occasion somewhat overshadowed the wider and more intriguing implications of the record. To appreciate the significance of the occurrence we must know something of the breeding biology, breeding sites and disbursal behaviour of common seals in the North Sea.

In the Wash colony, breeding takes place from mid June to mid July and tagging studies have shown that dispersing pups reach Yorkshire waters between 32-55 days. (average 47 days). This gives rise to a peak of sightings and strandings during August - the earliest date for a Wash-tagged pup to appear in Yorkshire waters being 4th August (Howes 1985).Thus for a pup to turn up so far from the Wash at the very early date of 15th July must either represent:-

a) an unusually early birth

b) the mischievous release of a pup found hauled out on the Lincolnshire coast and many are during June and July

c) a pup born much nearer to Yorkshire than the Wash, perhaps in the Humber area, possibly at Donna Nook. If this is the case the pup could herald the establishment of a permanent Humber population and thus more frequent visitations to the improving River Don.

REFERENCE.

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Yorkshire Post 2.10.1953. "Seal in river kept eating eels".

Doncaster Advertiser 18.7.1985 "Sammy the Seal" p.1 with photograph

Sheffield Morning Telegraph 17.7.85. "All Washed Up" p.1 with photograph

Yorkshire Post 17.7.85 "Stranded Seal Pup rests at Sanctuary". p.3.

Daily Express 17.7.85 "Baby Seal who's All at Sea" p.8 with photograph

Daily Telegraph 17.7=85 "Stranded Seal gets new Home" p.2.

The Mirror 17.7.85. "Flippin' Lucky" p.7 with photograph

THE DECLINE IN THE BADGER POPULATION IN THE DONCASTER AREA

Paul Johnson

Ten years ago the number of badger setts in the area east of Doncaster was approximately 22. In recent years this resident population has undergone a drastic decline. In a survey (1984) carried out by Dr.R.Paget of Sheffield, ten of these setts were chosen at random and revisited. Only two were found to be occupied by badgers, the rest were either being used by foxes or had been abandoned because of human interference (digging). This represants an 80% decrease of badger setts over ten years.

In order to provide a comparison, an identical survey was carried out this year (1985) in the area around the North York Moors National Park by P.Johnson of Doncaster, the results of which showed only a 10% reduction over the last ten years and only one sett showing any signs of human interference.

In a detailed study of badgers east of Doncaster, only three active setts could be found, each sett contains only one adult pair, only two of the three setts bred this year. The author was called to seven separate instances of digging on these remaining setts in 1985; also of the remaining population one sett has lost its breeding sow which was killed by a car, and at another sett one of the year's cubs was killed. The population in this area is now so reduced and scattered that the long term future is desperate.

A recent change in the Wildlife and Countryside Act has strengthened the legal protection afforded to badgers, placing the onus on the accused to prove his innocence. The need for people to be aware of the desperate state of badgers has led to several interested parties, namely West Yorkshire Police, the R.S.P.C.A., the Yorkshire Wildlife Trust, the National Farmers Union, the Nature Conservancy

Council and the Mammal Society to agree to co-ordinate their information and actions in dealing with cases of badger digging. A similar meeting was recently held in South Yorkshire with South Yorkshire Police to establish a similar policy. The Yorkshire Wildlife Trust has undertaken to act as the central information pool, and is currently compiling a register of all known badger setts in Yorkshire. Each police station will then be supplied with the locations of the setts in its area and the police have agreed to visit all these setts in order to establish their location and use. If you know of any badger setts please contact Mr S.Warburton, Y.W.T.York.

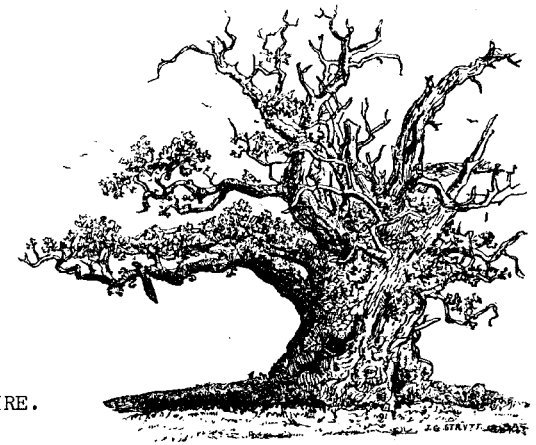
Many instances of badger digging are brought to the attention of the authorities by members of the public. Realising this, a list of recommendations has been drawn up to advise on what action should be taken in the event of suspected badger digging:-

1. Telephone the Police or the R.S.P.C.A. Inspectorate, Give them the place name or grid reference, also the registration of any vehicles involved.
2. Do not attempt to confront the people involved. Wait until the police and/or other bodies arrive. Many people who are known to be involved in badger digging have criminal records.
3. Do not, if possible, alert the diggers to the fact they have been seen.
4. If you do have a confrontation, make a note of the conversation, paying particular attention to any excuses given. Do not accept the excuse that they are after foxes.
5. If possible, photograph the affected sett, also any injuries on the dogs used, as this could lead to a prosecution under the 1911 Cruelty to Animals Act.

Badgers are shy, secretive animals and, apart from filling in an odd dyke or rolling a bit of straw, do man no harm. There has not been a Bovine Tuberculosis outbreak north of Staffordshire, so dairy farmers have nothing to fear in this area. It is suspected, however, that some badger diggers are relocating badgers from areas where T.B. is endemic in the badger population and could, through this action, spread T.B. into Yorkshire unless they are stopped.

TREES PLEASE

Peter Skidmore



THE COWTHORPE OAK NEAR YORK IN
THE 1820's WHEN IT WAS
THE LARGEST OLD OAK IN YORKSHIRE.

I was brought up on the treeless moorland edges of the South Lancashire Pennines during the Second World War, with its attendant travel restrictions and consequently I was perhaps ten years old before I had seen a true wood. Hardly surprisingly wooded landscapes have always held a particular appeal to me, although increasingly those which stir me most are those dominated by the native species for the site. What more magnificent spectacle than a highland glen clothed in an open canopy forest of Caledonian pines? Or a walk amongst the ancient oaks of Sherwood or Windsor? Imagine the glories of the "Urwald", the original virgin forests which clothed much of the world before man took over.

One of the more remarkable mass-suicidal traits of "civilised" man is his international propensity for mass deforestation. The 'uncivilised' inhabitants of the Amazonian Forests know their whole extence depends on the forest and they love and respect them. Despite the awful spectacle seen recently in Ethiopia, where mass famine has been shown to have resulted largely from forest clearance and the resultant climatic and hydrological changes, many nations are even now proceeding at breakneck speed down the same slippery slope. For over a decade Brazil has cleared an area of the Amazonian forest the size of Portugal every year and already, as was confidently predicted by their scientists, climatic changes and mass famines have set in. Yet the clearance programme proceeds towards total environmental destruction and a human holocaust of incomprehensible magnitude.

Britain passed through its main "Urwald" clearance in the late Bronze Age, so that when the Romans arrived they found a mainly open countryside under extensive, albeit by modern standards poor cultivation. Aerial photography and interpretation of crop marks have destroyed the once widespread belief that only a few centuries ago virtually the whole of lowland England was covered in the "Urwald". On the other hand do not abandon the idea altogether, for bits of "Urwald" survived and with the demise of the Roman era and the long period of economic doldrum which followed and which we commonly refer to as the Dark Ages, secondary forests developed so that when William took over in 1066 he found a land with extensive forests. There appears to be little evidence that the Saxons were noteworthy in terms of environmental destruction and William has been called the first major environmental conservationist, facetiously perhaps he has also been referred to as the last! Certainly he set aside the choicest bits of old forest and chase as royal hunting areas, and other large chunks of territory were handed over to his cronies for services rendered at Hastings. Doncaster lay on the boundaries of two of the royal hunting tracts - Hatfield Chace and Sherwood. Sherwood's northern marker oaks stood at Hesley, near Rossington and at Balby (about on the site of the White Swan today. Hatfield Chace initially lay to the east but Henry VIII extended it westwards to include the whole of Potteric Carr.

Despite the activities of the Forestry Commission, Britain retains the dubious distinction of being one of the least wooded of European countries, although the near total destruction of very old forest land on the continent makes a comparison more favourable to us in this regard. In England we have a few small stands of truly old oak forest, most notably near Edwinstowe and in such places as Bradgate Park, Windsor Great Park, etc. Scotland, with its many superb areas of Caledonian Pine forest and very extensive old birch and oak woods is far better endowed. Originally oak forest would have cover-

ed much of lowland Europe from the Pyrenees to central Sweden, but today the largest stand of ancient oak forest, perhaps a remnant of the "Urwald", is on the Swedish island of Bornholm.

The Nature Conservancy Council is currently surveying all "ancient woodland" throughout England. They define this as exant woods which have had persistent tree cover at least since Tudor times and have retained some important elements of their natural fauna and flora. Trees of great age are not vital to the study, but a very acceptable bonus. A more important consideration is the presence of plant and invertebrate "Old Forest Indicators" - organisms of usually very restricted occurrence which are characteristic of the oldest known woodlands.

How do we know if a wood is an old established one if there are no massive old trees? Apart from setting aside great slabs of territory for hunting, William I performed another very useful task - the compiling of the Domesday Book. This lists all the parishes of England with their economic details, including usually the total area of woodland. So, this gives us an idea of woodland cover in the late 11th century nationally and in each parish: it does not, however, give maps and so the actual woods cannot be precisely located. The earliest excellent maps were those of the Tudor cartographer Christopher Saxton, who was apparently the first mapmaker to base his maps on prior surveys. Woods are commonly shown on his maps, but perhaps not always. It was not until the mid 18th century that maps comparable with the Ordnance Survey were produced by Humphreys. These were superb, showing notonly the very extensive Commons and many, if not all, woodlands but also the names of the owners of the country houses. Thus the 1775 map for the Doncaster area gives Thomas Tofield as occupant of Wilsic Hall near Wadworth. The fascinating life and work of Thomas Tofield (1730-1779) should be known to all Doncaster naturalists.

Referring again to Cantley, the 1775 map shows the great expanse of Cantley Common, stretching east to the borders

of Hatfield Moors, and it is possible that it largely represents the area of the parish which was woodland in Domesday times. It may be added here that archival records are often very useful for locating old woods etc. Derek Allen has found references to Hatchell Wood in 1187, Bracken Plantation around 1250 and Gatewood about 1350, in his study of the woods in Cantley parish. The earliest map we have seen which shows Gatewood is on a well known but apparently anonymous map of Hatfield Chace, dated 1626. At least two partially wooded areas near Doncaster have never been cultivated - a remarkable pedigree since even Sherwood Forest appears to have resulted from secondary afforestation during the Dark Ages. When William I gave his cronies the run of the Chace, the "moors" were covered in a decaying forest of oak and pine, and Buckland has shown that in the late Bronze Age, represented by the lower margin of the surface peat, it was covered in virgin forest - the "Urwald". Today, perhaps, the only place in Europe remotely comparable to "Thorne Moor" at that time is the forest of Bialowjeza on the Polish-Soviet border. In lowland England very few sites share this stupendous pedigree. The antiquity of woodland communities on Thorne Moor is also substantiated by the "Old Forest Indicators" in the insect fauna.

The writer was one of the promulgator of the now established practice of using "Old Forest Indicators" amongst insects for evaluating woodland antiquity. Sometimes, however, anomalies arise. Sandall Beat for instance supports a number of such species - sufficient to suggest that this is an old wood. Yet we know that Sandall Beat was planted around 1800, whilst nearby Shaw Wood (or Armthorpe Shaw) was notable for its old oaks in Tudor times. Did the old Forest Indicators colonise Sandall Beat from Shaw Wood or is there another possibility? The inclosure Award Map for Cantley Common and parts adjacent (1785) shows "The Beat" as open common with odd stylized trees. Were these merely artist's licence, or were there large, isolated, perhaps ancient trees? Outliers, perhaps, of Armthorpe Shaw or Cantley parish woods.

A REVIEW OF THE LAND SLUGS OF THE DONCASTER DISTRICT

Brian C. Eversham

Background

Slugs are among the most familiar of invertebrates (for gardeners, perhaps too familiar), yet detailed information on the distribution and ecology of most species is still lacking. Indeed, seven of our thirty native and naturalized species have been recognized in Britain for less than fifteen years. Only one of these appears to be a recent colonist; the rest were merely 'lumped' within other species. It is very likely that other species new to science await description.

The Doncaster area has not been very thoroughly surveyed for its slugs in the recent past, and many of the older records cannot be identified clearly with currently recognized species. The standard work on national distributions is the Atlas of the non-marine Mollusca of the British Isles (Kerney 1976), which gives distribution maps for all the land and freshwater snails and bivalves, as well as most of the slugs, based on the 10 km squares of the national grid. This shows records of thirteen slug species (of twenty-eight which are mapped) for the area* around Doncaster. The present paper includes twenty-four species, although four of these have not been recorded since 1930, and a further two have been found no closer than Rotherham. Nonetheless, it is a significant increase since 1976. It seems unlikely that more than two or three of the slugs will have become extinct in the area, so more recording is obviously needed.

The majority of slugs are not difficult to identify. The Collins Field Guide, which includes the terrestrial snails too, appeared a few years ago (Kerney & Cameron 1979). This has excellent colour illustrations of almost all species, and reasonably thorough descriptions of most. A simple field key is available (Cameron, Eversham & Jackson 1982), which includes all the slug illustrations from the Collins Guide. A new Linnean Society Synopsis to the group is in preparation, and will give more background information, and fuller descriptions and anatomical details. I will gladly supply a copy of the draft field key from the synopsis, on receipt of a large SAE, so that it can be fully tested before publication.

I have not collected from the whole of the Doncaster district. Most of my time was concentrated on the Thorne and Hatfield areas, with a few forays into the magnesian limestone country around Sprotbrough and Kirk Smeaton. The available literature on local molluscs is meagre, though some valuable early records are contained in the collections and card index at Doncaster Museum & Art Gallery. This is therefore only a brief introduction and a base-line for further recording, as was done earlier for the pond-snails (Moss & Eversham 1982).

To this end, I should be glad to receive records from the area, and will be pleased to check identifications or to name batches of specimens, from the Doncaster area or elsewhere. Live slugs should be placed in a plastic bag with a little slightly damp newspaper. The sealed bag is placed in a crush-proof container (photographic slide boxes are ideal for small

* The area is defined here as those squraes which lie wholly or partly within 20 km of Doncaster town centre, viz. 43(SK) 49, 59, 69, 79; 44(SE) 40, 41, 50, 51, 60, 61, 70, 71.

numbers) and sent to: Brian Eversham, Biological Records Centre, ITE, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs PE17 2LS. Slugs preserved in alcohol are less easy to identify (as they lose much of the pigment which enables field identification of live animals), but can usually be named using characters which are easily seen after a simple dissection. Formalin may be used if nothing else is available, but makes the slugs tough and rather brittle, and much less easy to dissect.

Introduction

Land slugs are pulmonate molluscs whose shell has been reduced during evolution till the slug can no longer withdraw the whole of its body inside its shell as snails do. In parts of the world, intermediates between slugs and snails exist, and it is believed that our slugs are descended from at least three separate groups of shell-bearing snails. Only one family of British slugs possesses a small external shell. In the others, it is reduced to a small internal plate or cluster of chalky granules.

Lacking a shell, slugs are more vulnerable both to predators and desiccation. Hence they are mainly active by night and in damp weather. They spend the daytime sheltering under stones or logs, in the soil, or among leaf-litter. Compost heaps, vegetable matter, and refuse of all kinds (especially rotting newspapers) provide ideal resting sites for the majority of species. A couple of specialists use crevices in tree trunks or walls instead.

The reference list covers the half-dozen more helpful texts. More information is given in the draft from the synopsis (mentioned above).

Classified List

Family Arionidae

The round-backed slugs are mostly active on the soil surface, and usually feed on living or dead green plants. This is the group where taxonomic changes have been greatest, and where the need for further recording is most urgent.

Arion ater (Linnaeus 1758) Great Black Slug & Great Red Slug
This very large and variable slug is common in the Doncaster area and throughout Britain. Some authorities regard it as a pair of species. The second, 'Arion rufus', also occurs around Doncaster. Thorne and Hatfield Moors both support A. ater in the strictest sense. Forms from elsewhere resemble rufus more closely. Some individuals from Levitt Hagg agree with the concept of rufus given by Quick (1960) and others.

Arion flagellus Collinge 1893 Durham Slug
Common in areas of the West Country, and also in the North-East (whence its English name), this is present is gardens in Rotherham, and may well occur in Doncaster too. When adult, it is large and often khaki (though very variable). Youngsters are usually boldly striped, so would probably attract attention.

Arion subfuscus (Draparnaud 1805) Dusky Slug
A medium-sized slug (5-7 cm long when fully grown), this is widespread and often abundant in many habitats, though not usually numerous in gardens. It seems to be the only slug present on the wetter, most acidic parts of Thorne and Hatfield Moors, but is also frequent on derelict land in Doncaster, and in woods on the limestone.

Arion fasciatus (Nilsson 1823) Bourguignat's Slug
Until recently confused with the next two species. It is very common throughout the area in gardens, on wasteland and on roadside verges, but perhaps a little less frequent in undisturbed habitats.

Arion circumscriptus Johnston 1828 Dotted Slug
A nondescript monochrome slug, very common in gardens, hedgerows, grassland and woodland in the district.

Arion silvaticus Lohmander 1937 Silver Slug
Widespread but local, and often recorded in error for well-marked forms of A. circumscriptus. Usually away from gardens, its most frequent habitat seems to be wet woodland with sallows and willows. In such sites I have found it on Thorne and Hatfield Moors, at Sprotbrough Flash and at Denaby Ings. However, it also occurs on roadsides near Sandtoft and at Stapleton Parks.

Arion hortensis Férussac 1819 Southern Garden Slug
Most slugs formerly given this name are now referred to as A. distinctus. The true hortensis seems scarce in Yorkshire (Norris 1980b), though frequent in parts of the Midlands. The only local specimens I have seen were from a garden in Thorne.

Arion distinctus Mabille 1868 Common Garden Slug
Very abundant in most habitats, this is the small, dark grey-brown slug with an orange sole (underside) which is numerous and occasionally a pest in gardens.

Arion intermedius Normand 1852 Hedgehog slug
A very small slug whose tubercles give it a faintly 'prickly' appearance. It can be found in most sites in the area, but is especially numerous in permanent grassland. Here, it can often be found browsing on rabbit droppings early in the morning.

Family Milacidae

The species in this family may often be found on agricultural land as pests of root crops : cavities eaten into potatoes will usually be the work of a species of Milax.

Milax gagates (Draparnaud 1801) Smooth Jet Slug
A local species throughout Britain, there is a handful of Doncaster records, recent ones coming from Thorne, Roche Abbey, Hatfield Moors and Sprotbrough. All are from gardens or disturbed roadside sites.

Milax sowerbyi (Férussac 1823) Sowerby's Slug
Widespread and fairly common, though seldom abundant, there are a few early records, and recent ones from Doncaster, Hatfield and Thorne.

Milax budapestensis (Hazay 1881) Budapest Slug
Not reported from Britain until 1930, but now a pest over much of England and Wales. It is abundant in gardens, fields and other disturbed sites throughout the area.

Boettgerilla pallens Simroth 1912 Worm Slug
This strikingly thin, pale and worm-like animal is unlike any other slug. It is thus improbable that it would be over-looked. The first British record, from the Lake District, was in 1972 (Colville, Norris & Lloyd-Evans 1973). In 1979, it was found in a garden in Leeds (Norris 1980a), and in 1980 just over the Derbyshire boundary beside the River Derwent (Clinging 1980). Its spread continues unabated, presumably helped inadvertently by gardeners and horticultural dealers. The joint meeting of the DNS and the Yorkshire Conchological Society on 11 September 1982 found several specimens under stones and logs in Pot Riding Wood (Norris 1983), and within a couple of months it had been discovered just across the Don in Levitt Hagg quarry. From experience elsewhere in the country, it is likely to be well-established round Doncaster by now, and is a conspicuous species which members could well have in their gardens. It is unlikely to become a pest, however abundant: its diet is as yet unknown but repeated attempts to keep it in captivity have failed - it refuses to eat any of the usual staples (carrot, green leaves, oatmeal, parboiled rice) so it could well be a fungivore, or perhaps a grazer upon soil micro-organisms. Here again, members' observations would be useful.

Family Limacidae

The larger members of this family, in the genus Limax, are mainly browsers on dead plant material and on fungi, algae and lichens. Some have elaborate and lengthy courtship behaviours, and those which live on walls and tree trunks display a weak homing instinct. (Studies on the ground-dwellers using mark-recapture techniques could be very rewarding.) The smaller species, in the genus Deroceras (formerly Agriolimax) are a serious nuisance in gardens, and may attack field crops too.

Limax maximus Linnaeus 1758 Tiger Slug, Great Grey Slug
A large and handsome slug, found frequently in gardens and woods in all parts of the district. It is a voracious feeder on carrion and carnivore-faeces, though it usually subsists on dead and decaying plant material.

[Limax cinereoniger Wolf 1803 Ash-black Slug
A very large slug (alleged to exceed 30 cm on the continent) found in woodland, usually being confined to woods with a long history. It is usually black above, with a paler ridge or keel running part of the way up its back. The underside of adults is sharply two-coloured - black at the sides and white on the mid-line. Previously regarded as very rare in Yorkshire, there are several recent records in the Sheffield area (eg Little Matlock Wood (Spray 1972), Greno Woods, upper Ford Valley, Limb Valley, Underbank Reservoir (Clinging 1981)). It has also been found in many sites around the North York Moors. I suspect it may be present in woods around Doncaster too. Pot Riding, Levitt Hagg, Scabba, Edlington, Wadworth, Sandall Beat, Melton, Owston, Hampole and Brockadale all look prime candidates. In damp and reasonably warm weather, the slug often crawls actively during the day, so should be readily found.]

LIMACIDAE

Limax maximus - Tiger Slug

ARIONIDAE

Arion ater - Great Black Slug

LIMACIDAE

Deroceras reticulatum -

Netted Slug

MILACIDAE

Milax sowerbyi - Sowerby's Slug

TESTACELLIDAE

Testacella sp. - Shelled Slug

MILACIDAE

Boettgerilla pallens - Worm Slug

Limax flavus Linnaeus 1758 Yellow Slug
Strongly associated with man, this brightly-coloured medium-sized slug often enters damp kitchens and cellars, or lives around drains etc. In my experience, it is more easily recorded on walls or pavements, by torch light, and has been found thus at three locations in Thorne (the town which I have most often explored nocturnally in search of slugs). There is an old record from Conisbrough, and I suspect the slug may be found in most towns and villages when searched for.

Limax marginatus Müller 1774 Tree Slug
A rather translucent pale fawn slug, this is usually found in tree trunks, and sometimes lives on wall tops in rural areas. There is a record from Roche Abbey (1907), but the Atlas gives no records for the eastern end of vice-county 63. There is some evidence of a decline in the Midlands and East Anglia, possibly associated with pollution effects on lichens, the slug's major food. The Tree Slug is still abundant in some woods around Sheffield, so might possibly be refound near Doncaster.

[Limax tenellus Müller 1774 Lemon Slug
A small pure-yellow slug with purplish-black head and tentacles which is confined to ancient woodland, where it is nearly always found in autumn, often feeding on toadstools and other large fungi. The Atlas shows a handful of records from the western part of Yorkshire, coming from the fine old woods of the Dales. The card index of Doncaster Museum gives a record "Hemsworth and Shoulston [= Sharlston?], 1888", which suggests it is possible that it could turn up in the woods of the Don or Went valley. Any members visiting old woodland in autumn (eg on a fungus foray) are urged to acquaint themselves with this attractive and rare animal.]

Deroceras laeve (Müller 1774) Marsh Slug
Common in wet woodland as well as marshes, this is recorded from the whole of the district, but seems to be very local in a few parts of it (eg Fishlake-Thorne).

Deroceras caruanae (Pollonera 1891) Caruana's Slug
Not shown for the Doncaster area in the Atlas, I have found this abundantly in the majority of disturbed sites around Thorne, Hatfield and Sprotbrough. Specimens have also been seen from Doncaster itself, so it may be present throughout the district. It is a comparatively recent arrival in Britain (first record 1937), and is still increasing.

[Deroceras agreste (Linnaeus, 1758) Field Slug
This name was formerly used for D. reticulatum (see below). Apart from a very few records from an East Anglian fen (which could possibly be due to an accidental introduction), the major proven stronghold is from permanent pasture in the uplands and the North (including the Yorkshire Pennines). However, its recent discovery in limestone grassland at Little Stones Wood, near Worksop (A Norris, pers. comm.) represents an exciting extension of its range and raises the possibility that it could occur in our area, perhaps on the magnesian limestone around Warmsworth, Conisbrough or Sprotbrough. It is a small (3-4 cm when extended) 'sun-burnt oatmeal' coloured slug, with milky-white slime and lacking the darker flecks which are often seen on its common counterpart.]

Deroceras reticulatum (Müller 1774) Netted Slug
This is the commonest British slug, and is the species most likely to damage lettuces, seedlings and above-ground crops in general; it has recently become a pest of winter wheat crops. Very variable in colour, common forms are pinkish, grey or white with grey or blackish flecks and blotches. Early records of 'Agriolimax agrestis' are referable to this species. I have found it at every site where I have looked for slugs.

Family Testacellidae

The three species of shelled slugs are at once recognized by the small ear-shaped shell at the tail tip. None is common, and Testacella maugei is confined mainly to the South-West. All are hard to find, for they feed principally on earthworms and so spend much of their time underground, though they can be found on the surface on warm damp evenings. They are most often found in gardens, but other habitats rich in earthworms, such as well-manured pasture, can be productive.

Two species have been reported locally:

Testacella haliotidea Draparnaud, 1801 (Common Shelled Slug) : an undated record from Sandbeck Park, and one from Wath upon Dearne, 1897.

Testacella scutulum Sowerby 1821 (Golden Shelled Slug) : specimens in the Museum collection are labelled "Christ Church nurseries, 1930". Since one specimen had been labelled as T. haliotidea, the records of that species may possibly be open to doubt. However, there are scattered records of both species from Yorkshire (scutulum being the more numerous), so either may turn up again. I would be very glad to see specimens.

References

General: the following provide fuller details on identification and biology, and are critically reviewed in the draft from the forthcoming synopsis (copies available on request - please send a SAE).

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Acknowledgements

My thanks are due to Mr Adrian Norris, for unpublished information on Yorkshire slugs; to Mr Bill Ely for specimens of Arion flagellus from Rotherham; and to Mr Peter Skidmore for allowing me free access to the collections and records held by Doncaster Museum. I am grateful to Martin Moss and Chris Robinson for help with abstracting records from these sources.

BUTTERFLY SURVEY OF THE DONCASTER DISTRICT

Ted Rimington,
8, Riverside Drive, Sprotborough, Doncaster

Doncaster Naturalists' Society members may or may not know that I am endeavouring to draw together records of the butterflies of the Doncaster district.

This article is an appeal to members and friends to assist in the undertaking. All that is required is sufficient knowledge of butterflies to differentiate them, a note-book and as much time as you can spare, together with a little knowledge of what basic recording is about.

The area to be covered is that contained roughly within the borders of the D.M.B.C. boundaries, that is from Thorne Moors in the east to Howell Wood in the west, and from Little Smeaton in the north to Bircotes in the south. Do not be inhibited from recording from adjacent areas, such as Crowle Moors, Wentbridge and Maltby, as these areas are of equal interest.

The information required is as follows:-

1. The Species - obviously you must be able to differentiate species. A brief list of what might be expected is included to help.
2. The Locality - Give the place name precisely. This is more important than the grid reference, as a mistake in the reference can be drastic. Give the name, e.g. Finningley AND the locality, say "Adjacent to the air strip" or "Crow Wood".
3. Dates -Try if possible to give all sighting dates, particularly first and last. This will help determine flight periods in interesting species, particularly in potentially double brooded species. If, for example, you patrol an area regularly and note,say, sighting date of 2/6, 10/6, 17/6, 21/6, 27/6, 1/7, 10/7 and then no sightings until 1/8, 4/8, 11/8, 14/8, 21/8, 30/8, 2/9, with, let us say, the Large Skipper, that is interesting. This is because that butterfly is said by some to be universally single brooded. I have my doubts, however, and would welcome any findings on this score. The above example indicates double brooding.

It is acceptable, however, to lump the dates. In the above case these would read -
2/6 to 10/7; no sighting until 1/8 to 2/9.

4. Numbers - It does not matter greatly how you define numbers as long as the impression is conveyed. I suggest Abundant, Fair, Scarce, Very Scarce, which latter speaks for itself. Treat this as an impression generally.

5. Notes - If anything of interest strikes you, then jot it down.

LIST OF POSSIBLE SIGHTINGS

As an aid the following species may well be seen. All are fairly widespread in suitable habitats.

Large and Small: Green veined White

Orange Tip

Meadow Brown: Wall

Large Skipper; small Skipper

Peacock; Small Tortoiseshell: Red Admiral

Common Blue: Small Copper.

The following species may be seen, depending on luck and where you are.

Brimstone	Scarce but widespread
Gatekeeper (Hedge Brown)	Often common, spreading from the east
Large Heath	Thorne, Crowle Moor
Ringlet	Local, spreading from the east
Small Heath	Local, to the east
Speckled Wood	Localised
Dingy Skipper	Localised, perhaps spreading from the east
Comma	Very scarce, but about
White Letter Hairstreak	Local, but distributed generally
Painted Lady	Immigrant, very variable
Clouded Yellow	Immigrant, most unlikely
Holly Blue	Very scarce, but watch wherever holly and ivy grow - it is about. It is not afraid of built up areas, as long as there is tree cover, stone walls, old building. It is on the wing much earlier than the Common Blue (April and June respectively) and may be seen into October with its second brood.

Green Hairstreak	Extremely scarce. May just be about particularly on Thorne Moors.
Grizzled Skipper	Persistent but rare reports of its presence, particularly around Thorne area, also possibly to the south
Dark Green Fritillary	Persistant but rare reports around Thorne Moors and possibly extreme south.

EXAMPLE OF A RECORD

There are several ways of recording depending on circumstances but essentially, if you get down the locality, species and dates, that is adequate.

1. You can list species individually with the localities and dates itemised sequentially, or:-
2. List the localities individually with the species itemised sequentially. This will most probably be the best method for anyone engaged in the survey - I certainly find it so.

These samples are a season's summaries

Method 1.

Small Copper	1986
Finningley (adjacent airstrip)	3/5 - 27/6 Scarce generally
Sprotborough Flash	6/5 - very scarce
Maltby Common	7/5,25/8 Fair. Seem to like Ragwort plants

Method 2

Potteric Carr

Small Copper	3/5 - 27/6, Scarce.) Two distinct broods 10/7 - 29/8 Fair)
Green Hairstreak	8/5.- one only. Never seen this before in Doncaster
Common Blue	3/6,7/6. Very scarce, seen on dry areas 9/7,10/8 Fair. Generally in greater numbers on the Reserve.
Dingy Skipper	1/6 - 1/7. Abundant, much increased. Dry areas only.

etc. etc.

I would much prefer a season's summary of the second method. It does not matter, but I would prefer, a string of dates rather than 'lumping' them as in the instances of Common Blue and Small Copper above. Do what is easiest for your own organisation.

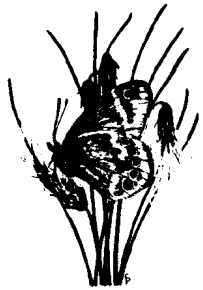
The last four butterflies on the list are very interesting and each represents a distinct "coup" in the district.

It is most unlikely that any butterfly not on the list will be seen, although of course a number of others have historically been present.

It will be of interest to anyone participating in the project to know that - perhaps surprisingly - the area is badly recorded both historically and at present. There are no records at all from some places and in some cases, particularly in old diaries or collections the blanket term "Doncaster or S.Yorks" is used, which is of course useful but imprecise. Moreover the entomologists of the early part of this century - and earlier - frequently ignored information on species which they considered insignificant but which to us is most interesting. For these reasons any information regarding the butterfly population of the district contained in any form whatsoever, whether it be in grandad's diaries, old newspaper cuttings or by personal recollection of individuals is of importance.

Would all participants either send me their records direct of hand them in to the Museum, labelled "Butterfly Survey", preferably at the end of the season in tabulated form.

Thank you for any help which you can give.



DONCASTER DISTRICT PLANT RECORDS FROM T. W. GISSING'S "FLORA OF WAKEFIELD"

C. A. Howes

Thomas Waller Gissing was born on 2nd August, 1829, at Halesworth, Suffolk. He trained as a pharmacist and moved to Wakefield where throughout his professional life he ran a chemist's shop (now a branch of Boots) at 30 Westgate, living in the flat above the business.

Like many chemists of his generation, Gissing became a keen and knowledgeable botanist and in 1862 he published his first book The Ferns and Fern Allies of Wakefield. This attractively produced work, illustrated by John E.Sowerby, the famous botanical illustrator, from Lambeth, London, is now a collectors' item.

During 1865 Gissing wrote a series of botanical notes for the Naturalist (pages, 6, 32, 56, 80, 94, 128, 147, 165, 184, 212 and 232) under the heading "Materials for a Flora of Wakefield" and in 1867 these were edited into book form and issued under the same title.

T.W.Gissing had three sons and two daughters. George, the eldest son, after a harrowing adolescence (which included a jail sentence), developed considerable talent as a writer, his novels being rated on a level with such authors and social commentators as Thomas Hardy, George Eliot and Rudyard Kipling. Another son, A.F.Gissing, like his father had an interest in botany. His collection of algae gathered in Northumberland during 1880 and 1899 was acquired by Wakefield Museum.

After his death on 28th December, 1870 T.W.Gissing's herbarium of vascular plants was obtained by Wakefield Museum where it is currently housed (Desmond 1977). His collection of Bryophytes which included material gathered by J.H.Davies (150), H.Ibbotson, J.Nowell and J.Dugdale also went to Wakefield Museum and together

with his son's algae collection is presently on long term loan to the Bradford Museums Service (Hartley 1977)

The following Doncaster district records have been extracted from T.W.Gissing's Flora of Wakefield ... the order and nomenclature of which have been altered to conform with Clapham, Tutin and Warburg (1952)

Localities mentioned are: Askern (SE/5613), Campsall (SE/5413), Conisbrough (SK/5198), Levitt Hagg (SE/5300), Norton (SE/5415), Smeaton(SE5216), Smeaton Crags (SE/5117), between Stainton and Tickhill (SK59), Wentbridge (SE/4817), Went Vale (SE/51), Went Valley (SE/4917;5617), and Womersley (SE/5219).

Hard Shield Fern	Polystichum lobatum (Huds.)	Wentbridge
Pasque Flower	Anemone pulsatilla L. "This rare and beautiful plant is fast disappearing from this, the only locality in which it has been seen in flower for the past five years".	Smeaton
Water Crowfoot	Ranunculus aquatilis L.	Campsall
Water Crowfoot	R.Trichophyllum Chaix	Campsall
Barberry	Berberis vulgaris E.B.	between Stainton and Tickhill (Mr.Forrest)
Purple Milk Vetch	Astragalus danicus Retz.	Near encampment Went Valley
Dropwort	Filipendula vulgaris Moench	Smeaton
Spring Cinquefoil	Potentilla tabernae-montani Aschers	Smeaton Crags
Rue-leaved Saxifrage	Saxifraga tridactylites L.	Smeaton, Womersley, Conisbrough
Alternate-flowered Water-milfoil	Myrophyllum alternifolium L.	Campsall
Mare's Tail	Hippuris vulgaris L.	Campsall
Autumn Starwort	Callitriche autumnalis L.	Askern
Great Water Dock	Rumex hydrolapathum Huds.	Askern
Pellitory-of-the-Wall	Parietaria diffusa Mert and Koch	Smeaton
Bell Heather	Erica cinerea L.	Went Vale
Oxlip	Primula elatior(L.)	Went Vale (Mrs Watson)
Yellow-wort	Blackstonia perfolita (L.)	Went Vale

Wild Clary	Salvia horminoides Pourr	Smeaton Crag
Clustered Bellflower	Campanula glomera L.	Went Vale
Squinancywort	Asperula cynanchica L.	Went Valley (Mrs Watson)
Nodding Bur-marigold	Bidens cernuus L.	Campsall
Blue Fleabane	Erigeron acris L.	Wentbridge
Carline Thistle	Carlina vulgaris L.	Went Vale
Welted Thistle	Carduus acanthoides L.	Norton - Smeaton,etc
Autumn Lady's Tresses	Spiranthes spiralis L.	Went Vale (Mrs Watson)
Fragrant Orchid	Gymnadenia conopsea(L)	Went Vale
Bee Orchid	Ophrys apifera Huds.	Went Vale (Mrs Watson)
Burnt-tip Orchid	Orchis ustulata L.	Went Vale (Mrs Watson)
Pyramidal Orchid	Anarcamptis pyramidalis(L.) "The variety with white flower is sometimes found. The lobes of the lip vary much in shape and size. In most plants the lobes are equal but many have the outer ones much larger than the central. In some plants the cluster of flowers is so loose as to appear at first sight more like a thinly flowered G.conopsea."	Wentbridge

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ASSEMBLING OF MOTHS

Albert Wright

Much study and research has been done regarding the assembling of moths, whereby the females of many species transmit a scent to attract their mates, sometimes from great distances, the pheremones being detected by the highly developed antennae of the males. At laboratory level work has been going on to reproduce the male lure, with the object of controlling destructive species.

At garden level the assembling of moths can be useful and entertaining, frequently disappointing, sometimes exciting. To attract a single mate for a choice bred specimen is jubilation to a rearer of moths, and to be pursued and surrounded in some cases by pretty moths may be surprising and delightful.

Now it seems we must travel to Scotland if we would assemble the fine KENTISH GLORY, but more universal day-flyers are the EMPEROR, OAK EGGER,NORTHERN EGGER, FOX and vapourer moths, to name but a few.

The females of day assembling kinds, usually remain still for several days if not mated, but night flying species often have more restless females which fly to a vantage point after dark. Tethering or tying out is a practice sometimes employed with larger moths, but this seems a bit rough on them. A better idea is a cage, simple in design, made after the manner of COLLINS AND WEAST, U.S.A. This consists of a rectangular box with two sides of perforated zinc or similar material, the top being made of two thin metal plates angled downwards at 45 degrees, to form a chute, with an apperture left for the entry of moths. The plates are kept 'slick'.

This cage will largely protect from predators, and has been used with effect with the emperor, norther egger, drinker, garden tiger, white and buff ermines, lime, poplar eyed hawks, puss, buff-tip, peppered and magpie moths, etc. Drinkers enter the cage soon after dark, but the garden tiger arrives mostly between 1.0 and 1.30 a.m., with dawn flights.

Some hawk moths which pair at dusk in confinement assemble late in the night; one unusual eyed hawk male, one year, arrived in daylight at 5.o.a.m. on 1st.June.

Failure to attract may be due to the female not calling or transmitting, particularly in the case of the emperor. A female of several days old with greater urgency may transmit most of the day, but usually the Empress dislikes any form of travel, and awaiting her pleasure may be as long as one or two hours. She may even 'call it a day' as will be seen in the accompanying tables.

This moth and some others, when calling or transmitting, straighten and extend their abdomensand the disseminating organs are well displayed. This is the sign patiently awaited, for without this moths will tantalisingly fly past.

The number of males recorded were limited by pairing of some of the females and, naturally, by bad weather, but dull days if warm, and light rain, were not often a deterrent. Sunshine after thunder storms quickly brought responses.

Wild Silk Moths of the United States
by Michael Colins and Robert Weast. 1961.
Published by Colins Radio Company, Cedar Rapids, IOWA. U.S.A.

ASSEMBLING RECORDS OF SATURNIA PAVONIA 1969- 1982

Locality	Date	No. of females present	Time on Site B.S.T.	Time Females Transmitted	Males Assembled	Remarks
Allerthorpe Common	29.5.72	1	2.0.p.m.	-	1	2 others seen
ditto	5.5.80	1	3.0	3.0.p.m.	nil	
Filingdales	8.5.76	2	1.0	3.30	36+	some melanics
Hatfield Moor	12.5.71	1	2.55	6.45	nil	1 seen 6.45
ditto	24.5.77	1	1.30	3.30	7	6-7 others seen
ditto	23.5.78	3	2.55	3.15	4	
ditto	24.5.79	1	2.35	3.10	1	
ditto	29.5.79	1	3.45	4.08	4	
ditto	21.5.82	1	3.15	3.35	1	
Hathersage Moors	10.5.71	2	-	-	12	1 female did not transmit
ditto	27.5.72	1	-	nil	nil	
ditto	28.4.73	1	11.30am	3.05	5	
ditto	14.5.73	1	12.30	2.10	28	Some melanics
ditto	11.5.74	1	2.30	-	10	1 melanic

Locality	Date	No.of females present	Time on Site B.S.T.	Time females Transmitted	Males Assembled	Remarks
Hathersage Moors	18.5.74	2	11.0 am	2.30	14	
ditto	20.5.75	1	12.0	3.30	4	
ditto	1.5.76	1	-	nil	nil	
Skipworth Common	9.5.71	1	-	-	8	
ditto	22.4.72	1	-	nil	nil	
ditto	2.6.72	1	2.20	4.50	nil	
ditto	3.6.72	1	1.57	3.50	2	
ditto	4.5.80	1	2.13	-	nil	1 male seen
ditto	14.5.81	1	-	3.45	1	
ditto	17.5.81	1	4.02	4.02	2	
Strensall Common	24.5.75	1	12.0	3.30	1	
ditto	28.5.70	1	12.30	3.05	1	
ditto	5.5.80	2	1.43	1.43	50	
ditto	5.5.80	1	4.45	4.45	2	second visit this date
ditto	17.5.81	1	2.00	2.00	50+	
Thorne Swine-fleet Moor	15.5.71	2	12.0	1.30	1	

Locality	Date	No.of females present	Time on Site B.S.T.	Time Females Transmitted	Males Assembled	Remarks
Thorne Moors	17 5 69	1	1 .0	2.30	2	
ditto	9.5.70	1	-	5.0	4?	
ditto	9.5.72	1	-	-	nil	
ditto	12.5.73	2	-	-	nil	
ditto	5.5.77	2	1.15	-	12	
FOX MOTH (Macrothylacia rubi)						
Thorne Moors	28.6.69	1	-	-	nil	
OAK EGGER (Lasiocampa quercus)						
Thorne Moors	26.7.70	1	-	-	nil	
ditto	24.7.71	1	12.0	12.0	6	Intermediates of Quercus -callunae
NORTHERN EGGER (L.Q.Callunae)						
Thorne Moors	16.7.71	1	-	2.15	1	1 other seen
Woodlands Doncaster	12.7.69	1	-	-	1	
ditto	6.7.79	2	5.50	5.50	3	
ditto	8.7.79	1	-	4.35	4	
ditto	11.7.79	1	-	-	nil	none by 6.45
ditto	13.7.79	1	4.0	6.30	2	

ISSN 0264 - 0651

SUMMER PROGRAMME 1986

Sat.May17th. Haxey Nat.Res. (D.M.Bramley)
Museum 1.30p.m.

Sat.May24th. Wadworth Wood (D.Bramley)
Museum 1.30p.m.

Sat.May31st. Y.N.U. Keld and Muker

Sat.June7th. Y.N.U. Howstean,Nidderdale

Sat.June14th. Bolton Abbey G.Mitchell
M.Hanson
Museum 9.30a.m.

Sat.June21st. Y.N.U. Potter Brompton

Sat.June28th.)
Sat.June29th.) Y.N.U. Goathland

Sat.July5th. Y.N.U. Loxley Valley

Sun.July6th. Theddlethorpe Dunes D.Bramley
Museum 9.30a.m.

Wed.July9th. Potteric Carr (D.M.Bramley)
Museum 6.30p.m.

Sat.July12th. Tresswell Wood (H.Ackroyd)
Museum 1.30p.m.

Sat.July19th. Shirley Pool (P.Skidmore)
Museum 1.30p.m.

Sat.July26th. Danes Dyke,Nr. Bridlington
Museum 9.30 a.m.(M.Hanson)

Sun.Aug.17th. Y.N.U. Sunk Island

Wed.Aug.27th. Firsby(Thribergh)
Museum 6.30p.m.(T.Higginbotham)

Sat.Sept.13th. Hatchell Wood- R.Taylor
C.Wall
Fungus Foray-Museum 1.30p.m.

Sun.Oct.12th. Owston Wood (H.Ackroyd)
Museum 1.30p.m.

NOTE : For all Y.N.U. Meetings..... if you are interested to go,please ring D.Bramley for details of meeting places,grid references,etc.
Tel:- Doncaster 535246