

THE VASCULUM

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Edited by:

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BY THE WAY

Secretaries of Societies and other contributors to the Vasculum should send their notes to the Editor before 15th June. 1986.

SUBSCRIPTIONS

If members will be good enough to consult the Vasculum of December last, they will be able to read, for at least a second time, a notice that appeals for early payment of subscriptions. A few, and we repeat a few, responded to the request and to them we say thank you. Unfortunately there are many, many more who either ignored the notice, forgot, put off or just could not bear to part with the money. We appeal to you once again, please sit down and write that cheque now. We need your subscription.

SHIRE PUBLICATIONS

We have the first eight parts of a new series of books called "Shire Natural History". Two of our members have reviewed four parts each:

No. 3. Bee Orchids. S. Blackmore.

No. 4. Fungi. Pamela Forey.

No. 6. Buttercups. S. Blackmore.

No. 8. Willows of the British Isles. Theresa Brendell.

The publishers of these guides claim to 'fill a gap between brief guides of general interest and full-length books for specialists'. I enjoyed reading them and thought them rather reminiscent of the 'Jarrod Nature Series'. The "Shire" series have more text, however. The coverage of the books referred to in the titles is inevitably uneven. All books are twenty-four pages yet 'Bee Orchids' deals with the four U.K. species of *Ophrys*, 'Willows' with eighteen species, 'Buttercups' with twenty-three species and 'Fungi' is left to deal with representative types as best it can!

These guides need to be used in conjunction with a flora, they have limited use as guides in their own right. All guides include a smattering of ecological comments and some of the folklore associated with the plants they cover. Inevitably, a concise treatment is needed when only twenty-four pages are available. Hence the novice might be left with the impression that *Claviceps purpurea* only infests rye grasses, which is not the case. 'Fungi' fails to make any mention of lichens yet deals with other fungal-plant interactions e.g. Mycorrhizas. In 'Bee Orchids' the statement that 'The rabbit contributes to the maintenance of grassland' is perhaps a little misleading. Such criticisms are probably unavoidable, given the task that the publishers have set themselves.

The guides contain little that is new but they do present a concise synthesis of information which is well-presented. There are good line drawings and colour photographs. If further titles appear I will be interested to see how broad the publishers definition of 'a single subject' becomes. At £1.25 each, the titles are fairly inexpensive and should prove useful little background readers for all sorts of interested people. I shall buy some for the school library.

John Burgess

No. 1. Hawk Moths of the British Isles. M. Easterbrook.

No. 2. The Puffin. J. Flegg.

No. 5. Parasitic Worms. J. Flegg.

No. 7. The Starling. C. J. Feare.

These books, each twenty-four pages in length, deal with specific subjects in more detail than that found in more generalised books. The contents of each are mostly interesting, informative and enjoyable. The photographs and diagrams add to the value of the book. However, there are no numbers to either text figures or plates and it is regretted that the two maps shown on p.11 of the Puffin by J. Flegg are not separated clearly.

The informative book on Hawk Moths by N. Easterbrook deals with these under the nine resident and eight migratory species to Britain. Life histories, characteristics and aids to identification of each species are given as well as useful hints on attracting them into the garden, collecting and breeding. The Puffin book by J. Flegg first compares puffin habits with those of other auks and then proceeds to mention different puffin species and how they live. The next section on the colonies and the puffin's year give more details of a puffin's life. Past and present problems include the inevitable pollution effects and the changing climate.

Parasitic Worms, again by J. Flegg, is about nematodes or eelworms and roundworms. Examples from the animal parasites are first described with their various life styles and then the plant parasites or eelworms with examples of the complex life histories of these and the effects on their hosts.

The Starling by C. J. Feare is subdivided under the adaptable starling, social life, and stalings and man. Each section is clear, well written and very informative. The effects of its success on man is divided between the benefits and damage and finally possible controls are discussed.

H M Johnson

THE SOCIETIES

DARLINGTON AND TEESDALE NATURALISTS' FIELD CLUB

The Annual Report for 1985 showed that the Field Club had a very good year with enthusiastic support from the members even when the weather was very indifferent. The average attendance for indoor meetings was up on the previous year.

Archeology (L. Woodhouse). The sixteenth century walls of Berwick Town were traversed and the eighth century Holy Island Priory visited during the Berwick weekend. Other visits were to the Yorick Centre at York and the Saxon church at Hart. **Botany** (M. Burnip). Alder trees were counted and measured at Witton-le-Wear to compare with 1973 records. Holy Island and St. Abbs Head visited on the Berwick weekend, were found to have a profusion of plants, many of which were similar in both localities. Hart Warren and Wensleydale had very different floras. Aysgarth and surrounds yielded over a hundred species of flowering plant. Fungi were also looked at in September.

Entomology (B. Hetherington). 14 species of butterfly were reported during the year including Small Copper, Large Heath, and Large and Small Skippers. Moths included an Argent and Sable, Yellow Underwing and Angle Shades. Ladybirds, dragonflies and ants were also noted and hoverfly species recorded for Hamsterley were listed.

Freshwater Life (C. Birkbeck). Ramshorn snails appear to have vanished from the River Tees but sticklebacks are present and dippers have returned. Salmon reached the Barnard Castle area with aid from the Water Authority who introduced large boulders into the river to raise the water depth below Broken Scar Dam.

Mammals (D. Griss). Few mammals were reported seen during the year. Red squirrel, mink, roe deer, fox, hare, hedgehog and a badger with cubs were amongst those seen at different localities.

Ornithology (D. Griss). The main outings were to the coast and included the Berwick weekend, Bass Rock, Bempton Cliffs and Teesmouth. A dawn chorus was heard at Brignall Banks. More noticeable records listed included many from Hartlepool, Teesmouth area with a few records from the west including waxwing at Richmond and crossbills at Slang and Hamsterley Forests.

The main field outings were reported and included a visit to the RSPB reserve at Bempton, another to Westgate, Weardale and a weekend to Berwick-upon-Tweed.

ANNFIELD PLAIN AND DISTRICT NATURALISTS' CLUB

Continuing our programme of summer outings, we went to Hartside, Crossfell and Penrith on 14 September 1986. The A Party then walked from Hartside along the moorland ridge to Crossfell summit. It turned out to be a very rough walk with a gale force wind for 6 miles during which we had half an hour of horizontal rain. At this point it was impossible to continue so we sheltered for a while. The return journey to Kirkland was little better, views were poor because of the mist and rain and only a few grouse were seen. The B Party had a better day from Penrith, enjoying the walk to Beacon Tower, returning via the Giant's Grave in the churchyard, the Castle and Tudor House.

On 12 October the bus took us to Alnwick and then left to pick us up later at Warkworth. The sun actually favoured us and it was pleasantly warm, more so than most of the summer. We walked downstream from Alndyke Farm to join the River Aln and so to the village of Lesbury. From here we made for the coast near Ainnmouth and then a shore walk to the waiting bus at Warkworth. We saw many flowers which were a delight and sampled the blackberries along the way, which were now quite ripe as were the snowberries and rowan berries.

The last walk of the season began by having a conducted tour of the dam and underground works at Derwent Reservoir. After a picnic lunch at Carricks Picnic Site, the coach took us up to West Ministeracres from which point the A Party walked via Healey church to Corbridge, through field, woodland and riverside paths, together with short stretches of country road. It was a fair autumnal day, a fitting end to the season.

BIRTLEY AND CHESTER-LE-STREET NATURAL HISTORY SOCIETY

A wide variety of lectures and discussions have been enjoyed by members during the winter months, when the weather has, in general, been too severe for the usual monthly outings. The season started on 7 September 1985 and has continued at fortnightly intervals. The highlight was the Annual Supper on 3 December when a huge spread was partly demolished by a very happy gathering of members. Afterwards the entertainment was rounded off by Mr. Kelly's beautiful slides of Austrian alpine flowers.

Sadly we lost one of our longest serving committee members when Mr. Eddie Hall died early in January. He will be sadly missed for his cheerful personality and great appreciation of wild-life films and painting.

NOTES AND RECORDS

NOTES

The Black Darter at Annfield Plain. I am pleased to report that the Black Darter Dragonfly (*Sympetrum danae*) has again turned up at Annfield Plain, and especially at a second pond that had not produced it before. I list the visits made, with sightings:

<i>Date</i>	Females	<i>Males</i>
17 August 1985	6 insects seen, all teneral.	
20 August 1985	Black Darters seen, not counted.	
24 August 1985	Black Darters seen, not counted.	
30 August 1985	Black Darters seen, not counted.	
5 September 1985	none seen Darters seen, not counted.	
12 September 1985	2 (now black)	3
14 September 1985	3	1
21 September 1985	3	0
28 September 1985	7	1
1 October 1985	2	0
5 October 1985	1	0
12 October 1985	2	0
14 October 1985	1	0
21 October 1985	none seen	

Interestingly, the insects seem to spend sunny days sitting on pieces of old rubbish, sunning themselves. Removal of the rubbish may not be such a good idea unless alternative sunning places were to be provided. Sheets of old plastic and mattresses are not very much like natural habitats!

Also seen at the Annfield Plain site were *Ischnura elegans* in the early part of the year and *Aeshna juncea* and *Lestes sponsa* both on 17 August. On 4 June 1985 a Pockerly Pond visit revealed *Pyrrosoma nymphula* and *Coenagrion puella*.

L. Moore.

Notes on Lepidoptera, 1985. I saw my first Peacock Butterfly on 30 May 1985 and Shotley Bridge and the next was not until 2 October at the same place. Painted Ladies were noted at Shotley Bridge on 13 October, at Medornsley on 14 October and along the Villa Real Road on 16 October. On 28 July two Swallowtail Moths were seen at 11.00 a.m. at Shotley Bridge, and on 27 June a Beautiful Carpet, *Mesoleuca albicillata* was found resting on a rotten tree stump also at Shotley Bridge. It obliged by staying asleep(?) throughout a lengthy photographing session.

L Moore

A Little Owl rescued. At about 3.00 a.m. on 18 February a friend was driving from Durham City to Chester-le-Street when his car windscreen was struck by a bird. He stopped the car and retrieved what appeared to be a bundle of feathers. On reaching home it was found to be very much alive and turned out to be a Little Owl (*Athene noctua*). It seemed to be in good shape but dazed so it was taken to a vet who advised him to take it to a bird sanctuary for further recovery.

R. Harris.

Another Little Owl. Members may be interested to hear of a little owl that I saw on Monday, 3 March 1986. I was driving home from work towards Shotley Bridge at 4.00 p.m. when I saw the bird on a very young ash tree with hardly any branches, on the main A694 road near the turn off to Blackhall Mill. I sat in the car opposite the bird (after realising what it was and reversing back) and it remained still for the ten minutes that I observed it, despite buses and lorries rushing past causing the tree to sway quite violently.

Margaret Nesbitt.

The Least Minor. Although this moth, *Photedes captiuncula* Treit., has long been well known in County Durham, little has been heard of it from Northumberland for over 150 years. There are two casual sightings, one at Embleton in 1960 and another at Bedlington in 1975, but in both these instances only single individuals were found. It is, therefore, of great importance that we can report the discovery of a thriving colony of the species near Arcot Hall, Cramlington. It was found on 28th July 1985 by T. Melling and later confirmed by J. Patrick.

T.C.D.

A bird note from Durham. On 20 February, a male tufted duck was observed swimming with a group of black-headed gulls on the river above Framwelgate Bridge. The ground was snow covered and there was some ice on the river.

A juvenile cormorant was seen on 8 March standing on a large branch, part of driftwood lying at the edge of the weir below the Framwelgate Bridge, Durham.

H. M. Johnson.

Acanthodians at Hawthorn Hive. Colliery spoil has been dumped in the sea from the mines along the Durham coast for many years and in some places the waste materials have built up to form a storm beach. A good example is Hawthorn Hive just south of Chourdon point (NZ 443464). Loose boulders of Upper Carboniferous, Coal Measures sandstone, shale, coal and other rocks are well seen, particularly below the high tide line where they are washed by the sea. A single block of sandstone containing the spines and teeth of acanthodian fishes has been found here. It is quite out of place and there is no way of determining the exact horizon or the location where the slab came from, though it probably came from the mine workings beneath the North Sea. It gives a tantalisingly inexact record of a most unusual Coal Measures bone bed lithology.

The slab measures 260mm x 300mm x 100mm thick and is composed of hard yellow, fine-grained, micaceous and carbonaceous sandstone that contains derived ironstone nodules. Similar rocks occur on the beach, but without the fish remains. More than 20 spines are visible on the slab in plan and section. They are broken, though examples up to 130mm long and up to 35mm diameter can be seen. The spines are black, with conspicuous ornament of chevron pattern, oblique raised ridges that diverge from the centre line of the anterior face. With the spines there are elongate conical teeth up to 10mm long.

Large spines with chevron ornament are widely known in the Carboniferous and have been given the name *Gyracanthus*. They are believed to be the pectoral spines of large acanthodians. The *Acanthodii* are an extinct sub-class of 'spiny sharks' found from the Silurian to the Permian. Their claim to fame lies in that they are regarded as the earliest true jawed fishes. *Gyracanthus* is a large evolved genus that inhabited fresh water, but it is only known from the pectoral spines.

The bone bed slab is in the collection of the Department of Geological Sciences, University of Durham, where it will be prepared to show the spines more clearly.

G. A. L. Johnson.

The Purple Hairstreak, *Quercusia quercus* L. in the North East. This butterfly has always been very rare in our counties. J. E. Robson, writing in his Catalogue in 1899, could only give Gibside and Dunston as localities where it might be found. Gibside seems to have been the most likely place for it was seen there by John Hancock in the early 1800's and again by J.C. Garrett in 1933. The felling of the Gibside woods and the replacement of most of the deciduous stands by conifers effectively wiped out the butterfly, Garrett's record being the last for the site. The late Professor J. W. H. Harrison found isolated examples near Birtley and Ravensworth in 1916 and 1917 respectively but these have never been repeated. Similarly, in Northumberland it was seen, as larvae, along the Devil's Water by J. R. Johnson and J. W. H. Harrison in 1933 and Sir W. de L. Aitchison at Kyohe Woods in July 1949-These two records also, have never been rediscovered.

In 1956 I was lucky enough to chance on a single butterfly along the railway between Rowlands Gill and Lintz Green, when it flew down to drink from a muddy patch at the side of the tracks (I was really trespassing at the time). Later, in the 1960's H. T. Eales mentioned to me that he had found a small colony of the species "near Lintzford", but no further details were given. It was obvious that the Derwent Valley was still the most likely place to find at least a small colony, possibly just managing to survive in our counties. In recent years much research has gone into finding more about the distribution of insects in the woodlands of the Derwent as elsewhere in Durham and the work paid off last summer, when in August 1985, John Durkin saw two Purple Hairstreaks playing about in the tops of the oaks near Friarside, just north-east of Lintzford. Apparently it is still very scarce and in need of careful conservation by taking care that the mature oaks in the Derwent Valley are allowed to remain and that further planting of seedling oaks takes place as an urgent necessity.

T.C.D.

The Ringlet, *Aphantopus hyperantus* L., in Durham. This Butterfly has its stronghold in our counties in North Northumberland (v.c. 68), along the coast between Bamburgh and Berwick and several places inland in the Cheviots especially around Wooler.

In Durham it has always been much more restricted in its distribution, although J. E. Robson had known it from Castle Eden Dene, Hart and around Dryderdale in the early part of last century. It then ran into a period of rapid recession so that Robson saw his last specimen in Durham in 1860. Nothing more was seen of it until the late Rev. Dr. J. E. Hull (the first Editor of this journal), retired and went to live with his daughter at Hookergate. In August 1951 he found the butterfly in some numbers flying along the edge of Chopwell Woods on the Hookergate/High Spen road (Vase. 37:23). Apart from a casual sighting along the Swalwell/Rowlands Gill railway track on 3 August 1969 by myself with other members of the Birtley and Chester-le-Street N.H.S., it was lost sight of again until last summer, in spite of several fruitless searches in the 1970's and early 1980's. In August 1985 John Durkin found it quite commonly, flying along most of the rides in Chopwell Woods.

T.C.D.

Three Bats. With reference to the note by Tony and Hazel Johnson, under this heading in Vasculum Vol. 70, p.49, we should have added a footnote to the effect that photographing bats is illegal under the new Bat Protection Regulations, although in this case no harm was done nor was the bat disturbed in any way.

Ed.

The Durham Flora Project. Readers may remember our appeal for help with the publication of Rev. G. G. Graham's new Flora of County Durham (Vasculum Vol. 70, P.10). No offers of publication were received so a number of interested local naturalists have got together and formed a publication committee. Appeals for funds have gone out to people and institutions with known interests in natural history publications, and it is very pleasing to be able to announce that money is now coming in at a fairly satisfactory rate. More is required, however, and the Editor would be very pleased to hear of anyone who could and would be kind enough to make a donation, of any size, to help get the project off the ground. It is hoped to start printing later this year but we must have those donations before the presses can roll.

T.C.D.

National Bat Year. There are four ways in which you can all help.

- * Inform Durham Bat Group if you know of any bat roosts. Most of our roosts are brought to our attention by members of the public.

- * Tell your friends that you are interested in bats. Despite all our publicity, there are still some people who do not know about Durham Bat Group. If people know that you are interested, then they will tell you and you can tell us.
- * Attend a bat-walk or a bat-course. Durham Bat Group hope to introduce interested members of the public to Britain's largest group of terrestrial mammals this year. Look out for Bat Walks in the summer (organised through Durham County Council) and for the weekend course organised in Darlington through the University of Durham School of Adult Education.
- * Join Durham Bat Group. You do not have to be a bat-expert to join. We can give you all the training you need in order to become a fully licensed bat-worker.

Contacts:

Gill Hinchcliffe. Tel. Bishop Auckland 730606 (evening)
 Noel Jackson. Tel. Lanchester 521635 (evening)
 Durham County Conservation Trust. Tel. Durham 69797 (office hours)
 Noel Jackson.

RECORDS
 DIPTERA—FLIES

The following Hover Flies—Syrphidae, were all identified by Stuart G. Ball.

<i>Syrphus ribesii</i> (L)	66
Common in the garden at Chester-le-Street from 20 August to 28 August 1984; on the river banks at Chester-le-Street, 21 July 1984 and throughout August; Waldrige Fell, 27 August 1984. This species is a frequent immigrant.	
<i>Syrphus vitripennis</i> (Mg)	66
Waldrige Fell, 27 August 1984.	
<i>Epistrophe grossulariae</i> (Mg)	66
Waldrige Fell, 3 September 1984. This is not normally a particularly common species, but in 1984 it seems to have been more abundant and a number of specimens have been seen.	
<i>Metasyrphus luniger</i> (Mg)	66
Chester-le-Street, in the garden 20 August 1984 and on the River Banks, August 1984.	
<i>Scaeva pyrastris</i> (L)	66
Chester-le-Street River Banks throughout August 1984.	
<i>Leucozona glaucus</i> (L)	66
Chester-le-Street River Banks, 19 July 1984.	
<i>Melangyna compositarum/labiatarum</i>	66
Chester-le-Street River Banks, 28 July, 19 July and 21 July 1984.	
<i>Epsisyphus bajteatus</i> (Degeer)	66
Chester-le-Street River Banks throughout August 1984; in the garden at Chester-le-Street, 20 August 1984 and on Waldrige Fell, 27 August 1984.	
<i>Platycheirus albimanus</i> (F)	66
Waldrige Fell, 27 August and 3 September 1984.	
<i>Platycheirus scutatus</i> (Mg)	66
Waldrige Fell, 27 August 1984	
<i>Chelisia pagana</i> (Mg)	66
Waldrige Fell, 3 September 1984. The specimen was unusual in having an orange tip to its scutellum—the lack of this is normally one of the characters which distinguishes it from several closely related species, so that it has been sent to a specialist for a second opinion.	
<i>Volucella pellucens</i> (L)	66
Riding Mill, 31 July 1984, per D. McCutcheon.	
<i>Arctophila fulva</i> (Harris)	66
Westernhopeburn, Weardale, 8 September 1984. This is an uncommon upland species, only previously recorded from Durham by Wingate (1900's) and Fordham (1930's)—both from Teesdale.	
<i>Helophilus pendulus</i> (L)	66
Wingate Quarry, 30 August 1984.	

<i>Eristalis arbustorum</i> (L)	66
Chester-el-Street River Banks, during August 1984; Waldrige Fell 3 September 1984.	
<i>Eristalis horricola</i> (Degeer)	66
Edmundbyers, 15 July 1984, per D. McCutcheon; and Waldrige Fell, 3 September 1984.	
<i>Eristalis intricarius</i> (L)	66
Thrislington Plantation, 11 August 1984.	
<i>Eristalis nemorum</i> (L)	66
Chester-le-Street River Banks, 18 July 1984.	
<i>Eristalis pertinax</i> (Scop.)	66
In the house window, Chester-le-Street, 15 June 1984; in the garden at Chester-le-Street, September 1984; Wingate Quarry, 30 August 1984.	
<i>Eristalis tenax</i> (L)	66
Chester-le-Street River Banks. 21 July and 28 August 1984; Waldrige Fell, 3 September 1984.	
	T.C.D.
LEPIDOPTERA—BUTTERFLIES AND MOTHS	
<i>Triphosa dubitata</i> Linn. The Tissue	66
One taken at my back garden light, Shildon, 24 September 1985	
<i>Rhodometra saccharia</i> Linn. The Vestal	66
One found in the hospital premises at Bishop Auckland on 2 October 1984	
	D. Kipling.
<i>Agonopterix assimilella</i> Treit	66
Bred from West Buttsfield Broom tips, emerged 29 May 1985; and from Waldrige Fell Broom, emerged 30 May 1985.	
<i>Cydia succedana</i> Denis & Schiff	66
In large numbers flying around gorse on Waldrige Fell, 29 May 1985.	
<i>Bryotropha terrella</i> Denis & Schiff	66
One of our commonest Gelechiids, it was flying in some numbers on Waldrige Fell on 29 May 1985, and in the trap at Chester-le-Street on 23 June 1985.	
<i>Syndemis musculana</i> Hb.	66
Flying freely in the birch woodland, Stuartfield South Plantation, 3 June 1985.	
<i>Nematopogon schwarzzeilus</i> Zeil	66
A few flying with the above species in Stuartfield South plantation, 3 June 1985.	
<i>Argyresthia pygmaeella</i> Hb.	66
Bred from tips of young shoots of <i>Salix atrocinerea</i> collected on Waldrige Fell, emerging 30 May 1985.	
<i>Hedya nubiferana</i> Haw.	66
This very common species was seen on the wing at Brasside 4 June 1985 and emerged from larvae beaten commonly from hawthorn at the same site. Imagoes on 6 June, 7 June and 18 June 1985. One of the bred specimens was an almost completely black melanic form.	
<i>Epiblema scutufana</i> Denis & Schiff, f. <i>cirsiana</i> Zeil.	66
Hawthorn Dene, 19 June 1985, several specimens.	
<i>Ancylis badiana</i> Denis & Schiff.	66
Several disturbed from the heather, Waldrige Fell, 12 June 1985.	
<i>Epinotia abbreviana</i> Fabr. (<i>trimaculana</i> Don.)	66
A few in the Hermitage Woods, Chester-le-Street, 10 June 1985.	
<i>Tinea trinotella</i> Thunb.	66
Taken frequently in the trap at Chester-le-Street, 11 June 1985 and later in the season.	
<i>Bryotropha affinis</i> Haw.	66
A species which is not often seen, a single specimen taken in the trap at Chester-le-Street, 23 June 1985.	
<i>Cydia aurana</i> Fabr.	66
This pretty species is well distributed and although the food plant, Hogweed, is very common in all waste places, the moth is never seen in large numbers, Brasside, 18 June 1985.	
<i>Argyresthia retinella</i> Zeil.	66
In swarms when birch branches were beaten, Waldrige Fell, 20 July 1985.	
<i>Parornis scoticella</i> S.Dainton. 66	
The caterpillars of this species mine the leaves of various <i>Sorbus</i> species and apple. Said to be bivoltine in southern England, flying in May and August, univoltine in the north flying only in August, this specimen arrived in the trap at Chester-le-Street on 23 July 1985, presumably an early single brooded example.	
	T.C.D.

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**T. C. DUNN, M.B.E., M.Sc.,
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BY THE WAY

Secretaries of Societies and other contributors to the Vasculum should send their notes to the Editor before 15th November, 1986.

SUBSCRIPTIONS

In spite of notices in previous editions of the Vasculum, there are still a number of unpaid subscriptions. If you are one of those forgetful characters, a reminder is enclosed with this quarter's journal to jog your memory. Please be good enough to act on it immediately.

THE ABNORMAL SPRING

This year has seen such unusual weather that several records have already been broken. We refer to the abnormal number of days with temperatures well below the seasonal average since Christmas. These cold days and nights have been accompanied by excessive rainfall (or snow).

The hibernating butterflies like the small tortoiseshell and the peacock, suffered badly when they emerged from their winter quarters in March and April. The small tortoiseshell was hardly in evidence at all except in ones and twos on the very rare days when a little sunshine tempted them to fly. So far we have not seen a single nest of their caterpillars and even those which may be on the nettles (there certainly will be a few) are going to be very slow in pupating because of the low temperatures and consequent slow rate of metabolism. We fear disastrous losses during the early caterpillar stages and the July brood of butterflies is likely to be late if it appears at all. The probability is that the insect will miss out the July brood altogether and produce only an autumn brood for hibernation.

As for the peacock, we have seen not a single specimen nor received a single report of it. We can only hope that the setback is not too serious, as it was just beginning to be more plentiful in our area.

The Green-veined White, just emerging, is showing many more abnormally dark-veined specimens than usual. It is well known that dark forms of many butterflies can be artificially produced by refrigerating the pupae for a few days just before the emergence of the imago. Could the abnormally bad weather have acted in the same way as experimental refrigeration?

THE MOTHS AND BUTTERFLIES OF NORTHUMBERLAND AND DURHAM

During recent years, Dr. J. D. Parrack and the Editor have been labouring away at the production of an updated version of Robson's Catalogue of the Lepidoptera of Northumberland and Durham. Part One, Macrolepidoptera, is now almost complete and it is hoped to publish it later in 1986. It will be much more than a mere extension of Robson's Catalogue and will be in the form of a Supplement to the Vasculum. It will be sold to members and non-members and not issued as part of the membership fee as in the case of normal Vasculum issues. Of necessity, because of the cost, only a limited number of copies will be printed. In order to estimate as nearly as possible the number required, would all members desiring a copy at the concessionary price (one only at £4.50) please send their orders, with cheque, to the Editor as soon as possible. The list will close on 31st August. After that date it may not be possible to obtain a copy at all and even if there is a demand for a second printing, the price will not necessarily be the same as our first offer.

Non-members such as libraries and other institutions can buy copies at £6.00 each, again provided that a prepublication order, with cheque, has been received. Members also can buy extra copies at £6.00 over and above their allotment of one copy at £4.50.

The book is approximately 300 pages long with up-to-the-minute details of the distribution of each species together with a map, where it is sufficiently useful to justify the cost of the space required. We think it is good value for money and a must for all those workers who have used Robson over the years.

A second part on the Microlepidoptera will be written and published in three or four years time when the recording of these less well-known species is more complete. In the meantime we would be most grateful for help from interested members. Lists from microlepidopterists are urgently needed and even if you do not feel competent enough to provide records, we would willingly identify and record any insects sent to us. All submissions will be acknowledged and identifications notified to the collector.

THE SOCIETIES

NORTHERN NATURALISTS' UNION

The 62nd Annual Meeting was held in the Hancock Museum, Newcastle upon Tyne, on 22nd March 1986, by kind invitation of the Natural History Society of Northumbria.

During the short business meeting the treasurer reported a surplus on the year's working which would be set aside for future publications. Then followed the lecture entitled 'The Natural History of Ground Beetles' by Dr. Martin Luff.

The lecturer set the scene with a slide showing the large *Carabus nitens*, as being representative of many of the 300 British species. The various Coleopterid structures were pointed out, before passing to a series of examples with interesting life histories and habits. The Tiger Beetle was one such chosen example, in this case having a decidedly carnivorous way of life both as larva and imago. Then followed species of *Pterostichus* with comments on their scavenging habits. Woodland forms were mentioned, some feeding on snails e.g. the glow-worm beetle and others on springtails. Species of agriculture were also discussed, with reference to the different species found in ploughed fields as compared with meadows and pastures. Most grassland forms prefer long grass and in this habitat both diversity of species and numbers of individuals can be very high. Many are difficult to locate in the middle of dense tussocks and can only be sampled by digging up a tussock and shaking out the inhabitants on to a sheet of paper. By doing this it is possible to deduce the previous method of management of the site by the kinds of species present. Water beetles were next dealt with, with particular reference to the survey work recently carried out by M. D. Eyre, S. G. Ball and G. N. Foster.

Lastly some laboratory experiments were described especially with reference to attractants. It would appear that very few species use pheromones as do other orders of Insecta, but that most of them use formic acid both as a warning signal as well as an attractant.

After a period of questions and discussion. Dr. E. Turnbull gave an appreciative vote of thanks to Dr. Luff, and we all proceeded to partake of the tea provided by Mrs. Hall and Miss Vincent. At the same time the largest collection of exhibits seen for many years was examined and talked over with the exhibitors. Mr. Lance Moore showed some of his beautiful slides of various natural history subjects, Mr. Milligan put on an extensive exhibit publicising new literature on the Foxglove, Mr. N. Jackson provided an exhibit by Durham Bat Group and appealed for more helpers, Mr. Lee Stephenson showed photographs and specimens illustrating the life history of a Wart-biter, Dr. E. Turnbull put out postage stamps with natural history subjects and some New Zealand shells, Mr. Nick Cook had a case of northern butterflies. Peter Midgley a box containing a hawkmoth pupa, and Mr. Dunn showed some leaf mines together with a few species of *Phyllonorycter* moths which caused the infestation and also eight new books published in the Shire Natural History Series by Shire Publications Ltd. The exhibits encouraged much discussion and it was some time before all the members could be persuaded to leave the museum.

The 174th Field Meeting took place at Norman's Riding near Winlaton on May 31st, 1986, the leader being Mr. D. McCutcheon. Some fifteen to twenty members and friends gathered at Mr. McCutcheon's Poultry Farm to look at the surrounding woodlands.

The ponds recently constructed in the Poultry Farm gardens were first of all inspected and here we saw many thriving marsh and pond plants as well as tadpoles and dragon-fly larvae. The adjacent woodland which Mr. McCutcheon is presently modifying so as to encourage a more varied collection of plants and animals was then investigated. Here the usual spring woodland flowers were beginning to spread as

conifers were being thinned and deciduous seedlings, mostly oak, were taking over. In it we came upon a willow-warbler's nest and heard many other birds.

The route then followed a public footpath through the Hospital Wood and Stampley Moss Wood. These were found to have a very rich ground flora. Common plants like bluebell, wood violet, wood anemone, dog's mercury etc., being suddenly replaced by those of alder carr and then further on with wood sanicle etc. which prefer a more neutral substrate. Altogether it was an impressively rich display of a very large number of species.

The entomologists found much to make them happy. Here again the varied flora produced a changing set of insect species. Perhaps the most important was *Lomographa temerata*, the Clouded Silver Moth, newly emerged. Several were seen, proving with new sightings in other parts of the region during the last few years, that its spread and increase in numbers is fairly general. Altogether this was an outing of immense interest and importance, thoroughly enjoyed by all present.

NOTES AND RECORDS

NOTES

Red Pea Galls on Oak. During one of the Durham County Council's Guided Walks in Rain-ton Park Woods on June 1st, the seedling oaks were found to be excessively infected with Red Pea Galls formed by the activities of *Cynips divisa*. In a few cases the infestation was so complete as to cause purple coloration of the leaves which were also stunted as compared with less badly infected saplings.

T.C.D.

Late dates for butterflies. Many butterflies have been very late in making their appearance on the wing this year. The first Small Tortoiseshell was seen on the River Banks at Chester-le-Street on May 1st and the first Green-veined White three weeks later on 22nd. The Green Hair-streak was present on Waldrige Fell on May 24th and the first Orange-tip appeared in the Hermitage Woods, Chester-le-Street on May 30th. The first Small White (*Pteris rapae*) was not spotted until June 4th. These dates are all between four and six weeks later than usual.

T.C.D.

A walk through Lumley Woods. It has not been possible to walk through Lumley Woods since the trees were clear-felled and re-planted (about ten years ago), until comparatively recently when the County Council has come to some arrangement about access with the owner. An afternoon there a few days ago (to shelter from the strong winds) proved to be a delight. The bluebells and other spring woodland flowers were in full bloom. It was especially gratifying to see that the wild daffodils, yellow archangel and hart's tongue fern are still flourishing as they did twenty years ago. I did not, however, find any toothwort which used to be so very plentiful.

T.C.D.

Spread of the Clouded Silver moth. This species, *Lomographa temerata*, unknown in our counties when Robson wrote his catalogue at the turn of the century, suddenly burst upon our countryside in the 1970's. Since then it has rapidly spread over many parts of the north-east. It was in evidence at Norman's Riding during the Field Meeting on 31st May and most of those present saw and admired it. Furthermore it appeared at night, during a midnight sortie, at Brasside N.R. on 2nd June. These records represent further extensions of its range.

T.C.D.

Melanism in moths again. Most naturalists have heard of the research and publicity given to the Peppered Moth (*Biston betularia*), because of its variation towards total melanism. Although the position with respect to the percentages of the different forms is continually changing it is still a fine example of Natural Selection.

Other species of insects show the same phenomenon although perhaps not in such a clear-cut way. The Scalloped Hazel, *Gonodontis bidentata*, has long been known to show a melanic form which is especially common around Manchester. In Durham the collectors have never seen much of such a full melanic of this species, but Dr. J. D. Parrack showed me one he had captured a few days ago at Whitley Bay. What is more, he informs me that he has known it from that area, although not common, for many years.

T.C.D.

The Carline Thistle. A plant in full bloom was seen on the old railway line from Salter's Gate to Tow Law, near the point where the right of way crosses the line. Its environmental demands are usually for very dry limey soils where it can obtain plenty of light (amongst other things). On this railway line I was surprised to find it for although dryness and good light are both present, the lime component was not in evidence.

Miss Jenny Wade.

The Giant Butterbur. About one mile south of Hexham there is a house named Loughbrow. A footpath from the Yarridge road traverses the edge of the grounds and joins the drive near the entrance gates. Just past this junction on the right hand side there is a wet patch where I saw a number of plants which I identified as Giant Butterbur (*Petasites japonicus*). This was new to me and growing alongside were several plants of the Cuckoo Pint but with yellow leaves rather than the usual dark green. Would this be one of the Cuckoo Pint's many known varieties? On visiting the Valley Gardens in Harrogate I saw lots of similar plants along the side of the stream. I wonder if any member can provide any extra information about these two plants?

Miss Jenny Wade.

Blue tits after nectar. A pair of blue tits were again seen this year trying to obtain nectar from the flowering currant flowers as was reported last year (Vasculum 1985, 70, 15). This time they were engaged in nest building and seemed to use the nectar as an energy source. Feeding for nectar was seen between the 4th and 7th May and each time was only for 1-2 minutes when 15, 20 or more flowers were visited. Great tits, however, were not observed at the bushes this year.

H. M. Johnson.

The Late Spring. The cold wet spring led to late arrivals and departures of migrants in Durham City again. Five siskins were still feeding in a city garden on 3rd April and bramblings in another garden until the end of March.

Chiffchaffs and willow warblers were observed on 23rd, 24th April. On the 25th they were plentiful in some woods but were not observed in Great High Wood. The next day they had become plentiful there, probably having moved eastward from Biards Wood. The 25th also marked the arrival of the swallow and house martin. A swift was observed on the 7th May.

H. M. Johnson.

Rookery Notes. On April 17th, 79 nests were counted but by 6th May this had risen to a total of 95 nests. This year showed an increase of 12 nests over the 1985 total in the Prebends rookery in Durham. More nests were found on the south side of Durham School, following the general trend over the years.

H. M. Johnson.

RECORDS

COLEOPTERA - BEETLES

The following beetles were collected in Slacks Plantation, Northumberland, all v.c. 67.

CARABIDAE

Carabus problematicus Herbst, 1786 — common in woodland.

C. violaceus Linn., 1758 — common in woodland.

Leistus ferruginus Linn., 1758 — common.

Nebria brevicollis Fab., 1792 — abundant.

Notiophilus biguttatus Fab., 1779 — common.

Bembidion harpafoides Serv., 1821 — somewhat local.

Pterostichus madidus Fab., 1775 — abundant.

P. niger Schall., 1783 — common.

Abax parrallelepipedus P. & M., 1783 — common in woodland.

Calathus piceus Marsh., 1802 — common in woodland.

SILPHIDAE

Necrophorus vespilloides Herbst., 1873 — a burying beetle, common.

STAPHYLINIDAE

Anthophagus caraboides Linn., 1758 — in moss etc., common.

Atrecus affinis Pay., 1789 — under bark, common.

Philonthus decorus Grav., 1802 — abundant.

Tachyporus obtusus Linn., 1758 — in vegetable refuse, common.

T. signatus Grav., 1802 — in moss etc., common.

ELATERIDAE

Agriotes pallidus Ill., 1807 — common in woodland.

Adrastus pallens Fab., 1792 — common in woods.

CANTHARIDAE

Cantharis decipiens Baudi, 1871 — said to be local (Fowler, 1887-91; Joy, 1932), we have found it common.

Phagomycha lignosa Muell., 1764 — common.

ANOBIIDAE

Prilinus pectinicornis Linn., 1758 — in old wood, somewhat local.

NITIDULIDAE

Meligethes aeneus Fab., 1775 — common in flowers.

Epuraea melanocephala Marsh., 1802 — in flowers, local (Joy, 1932).

COCCINELUDAE

Adalia decempunctata Linn., 1758 — very common in woodland.

Coccinella septempunctata Linn., 1758 — very common.

Calvia quattuordecimguttata Linn., 1758 — very common in woodland.

CHRYSOMELIDAE

Phyllodecta vulgatissima Linn., 1758 — common on *Salix* spp.

CURCULIONIDAE

Otiorynchus singularis Linn., 1767-abundant.

Phyllobius argentatus Linn., 1758 — common in deciduous woodland.

P. maculicornis Germ., 1824 — not uncommon in woods.

P. pyri Linn., 1758 — very common in deciduous woodland.

Polydrusus cervinus Linn., 1758 — common in woodland.

Barypeithes pellucidus Bohe., 1834 — in moss etc., fairly common.

Strophosomus melanogrammus Forst., 1771 — common in woodland.
Cidnorrhinus quadrimaculatus Linn., 1758 — common in woodland.

M. D. Eyre & M. A. Walker, May 1981

The following beetles were all recorded at Rothley Lakes, Northumberland, v.c. 67.

CARABIDAE

Nebria gyllenhalii Schoen., 1806 — not common.
Agonum albipes Fab., 1796 — common by water.

STAPHYLINIDAE

Anthophagus caraboides Linn., 1758 — in moss etc., common.

SCIRTIDAE

Microcara testacea Linn., 1767 — common in herbage.

ELATERIDAE

Athous haemorrhoidalis Fab., 1801 — abundant.
Selatosomus incanus Gyll., 1827 — common.

CANTHARIDAE

Cantharis pellucida Fab., 1792 — common.
Rhagonycha femoralis Brulle, 1832 — common.
R. lignosa Meull., 1764 — common.
Malthodes marginatus Lat., 1806 — common in woods.

COCCINELLIDAE

Adalia bipunctata Linn., 1758 — common in woodland.
A. decempunctata Linn., 1758 — very common in woodland.
Calvia quattuordecimguttata Linn., 1758 — very common in woodland.

CERAMBYCIDAE

Rhagium bifasciatum Fab., 1775 — fairly common, in dead wood.

CHRYSOMELIDAE

Phyllodecta vitellinae Linn., 1758) common on *Salix* spp.
P. vulgatissima Linn., 1758 — common on *Salix* spp.
Lochmaea saturalis Thörn., 1866 — common on heather.
Luperus longicornis Fab., 1781 — on *Betulae*, *Salix* and *Inus*, somewhat local (Fowler, 1877—91).
Chalcoides fulvicornis Fab., 1792 — common on *Salix*.

ATTELABIDAE

Deporaus betulae Linn., 1758 — common on birch.

CURCULIONIDAE

Otiorrhynchus singularis Linn., 1767 — abundant.
Phyllobius argentatus Linn., 1758 — common in deciduous woodland.
P. calcaratus Fab., 1792 — common in deciduous woodland.
P. pyri Linn., 1758 — very common in deciduous woodland.
Polydrusus cervinus Linn., 1758 — common in woodland.
Strophosomus melanogrammus Forst., 1771 — common in woodland.

M. D. Eyre & M. A. Walker, February 1981.

The following beetles were recorded at Rothley Lakes, Northumberland, v.c. 67, on a different occasion from those above.

HYDROPHILIDAE

Helophorus brevipalpus Bedel, 1881 — common by water.

H. griseus Herbst., 1793—by water.
Anacaena globulus Pay., 1798 — common in ponds.

STAPHYLINIDAE

Anthophagus caraboides Linn., 1758 — in moss etc., common.

SCIRTIDAE

Microcara testacea Linn., 1767— common in herbage.

ELATERIDAE

Dalopius marginatus Linn., 1758 — common in woods.

CANTHARIDAE

Rhagonycha lignosa Muell., 1764 — common.
Malthodes marginatus Lat., 1806 — common in woods.

NITIDUODAE

Meligethes flavimanus Steph., 1830 — not uncommon in flowers.

COCCINELUDAE

Adalia decempunctata Linn., 1758 — very common in woodland.
Anatis ocellata Linn., 1758 — on Scots pine, not common.
Calvia quatuordecimguttata Linn., 1758 — very common in woodland.

CERAMBYCIDAE

Rhagium mordax Degeer, 1775 — fairly common in dead wood.

CHRYSOMELIDAE

Platamaris sericea Linn., 1758 — on aquatic plants, somewhat local.
Phyllodecta vitellinae Linn., 1758 — common on *Salix* spp.
P. vulgatissima Linn., 1758 — common on *Salix* spp.

ATTELABIDAE

Deporaus betulae Linn. 1758 — common on birch.

CURCULIONIDAE

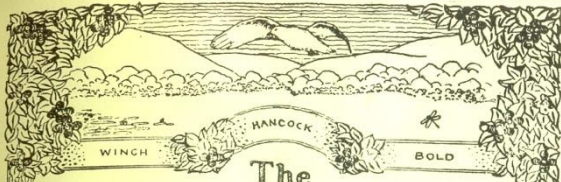
Otiorrhynchus singularis Linn., 1767 — abundant.
Phyllobius argentatus Linn., 1758 — common in deciduous woodland.
P. calcaratus Fab., 1792 — common in deciduous woodland.
Polydrusus cervinus Linn., 1758 — common in woodland.
P. pterygialis Bohé., 1840 — not uncommon in deciduous woodland.
Strophosomus melanogrammus Forst., 1771 — common in woodland.
Hyllobius abietis Linn., 1758 — on conifers, not common.

M. D. Eyre & M. A. Walker, May 1981.

LEPIDOPTERA BUTTERFLIES AND MOTHS

Ectoedemia arcuatella H., — S. 66
Mines on wild strawberry leaves, 3 November 1985, from L. Moore.
Ectoedemia atricollis St. 66
Hermitage Woods, Chester-le-Street, mines on hawthorn, 5 October 1985; Chester-le-Street River Banks,
mines on hawthorn, 6 October 1985; Brasside, mines on hawthorn, 8 October 1985; Chopwell Wood,
mines on hawthorn sent by L. Moore, 3 November 1985.
Ectoedemia angulifasciella St. 66
Brasside, mines on rose, 8 October 1985, 22 October 1985.

T.C.D.



The Vasculum

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Edited by
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and should be sent to the Editor

ALDER
A HANCOCK
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Edited by

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EDITORIAL

Important papers continue to be sent in for publication for which we are most grateful to our enthusiastic authors. We hope you enjoy reading this edition and will continue to give your full support to their efforts.

THE DISTRIBUTION OF THE WATER VOLE *ARVICOLA TERRESTRIS* L. IN NORTH EAST ENGLAND

Peter Davis, The Hancock Museum, Newcastle upon Tyne

INTRODUCTION

Mennel & Perkins (1863) described the water vole as a species abundant everywhere about the banks and ditches, streams, ponds and rivers' in Northumberland and Durham. Since the publication of this 'Catalogue of the Mammalia of Northumberland and Durham', no further authoritative statement relating to the status of the species in N. E. England has been printed. The majority of recent work relating to *Arvicola* has been largely devoted to its taxonomic status (e.g. Corbet et. al. 1970), although useful summaries of its biology have been provided by Corbet (1966) and Corbet and Southern (1977); Arnold (1978) gives a 10 km. sq. distribution map for the British Isles. Undoubtedly the character of the north east landscape has changed since the publication of Mennel & Perkins' 'Catalogue', and it seems highly probable that the water vole is less ubiquitous than was the case in the nineteenth century. The results of a recent survey relating to *Arvicola terrestris* are presented here.

METHODS

The survey, which began in 1983 and continued until 1985 was co-ordinated by the Natural History Panel of the Northern Federation of Museums and Art Galleries - a consortium of natural history curators in the region's museums. It was designed as a follow-up to successful 'public-participation' surveys (Pettigrew, 1977, Davis 1979a, Davis 1979b) on other easily recognised members of the local fauna, and followed the same basic approach. *Arvicola* was selected as a target animal because it is easily recognised (ii) it is often seen during the day (iii) little was known of its current status and distribution and (iv) it had 'furry animal', (and in this case Wind In the Willows) appeal. The survey was conducted by producing and circulating illustrated A4 information leaflets on the water vole, explaining the aims of the survey, how to identify the species and distinguish it from the brown rat, and giving details of signs to look out for - footprints, burrows, 'lawns', runways, latrines and food remains. Attached to this information leaflet was an A4 sheet on which to record information about sightings; these were completed and returned to the region's museums. As an added incentive, all recorders were sent a wildlife print by local artist, David Green. All records have been collated at the Hancock Museum, and will subsequently be lodged in the two regional record centres, with a copy of the data being forwarded to the National Biological Records Centre at Monks Wood.

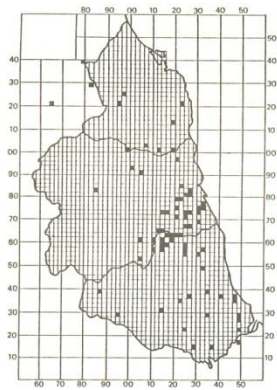


Fig. 1. Museum Survey;
Distribution of
Water Voles by Tetrads.

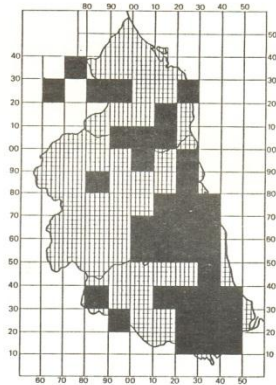


Fig. 2. Museum Survey;
Distribution of Water
Voles by 10 km Squares.

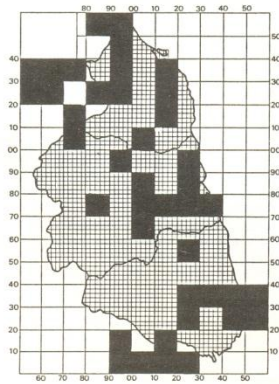


Fig. 3. Museum Survey;
Distribution of Water
Voles by 10 km Squares
according to Arnold, 1978.

RESULTS

A total of 85 records were received from 44 contributors, These are plotted on a tetrad basis (Fig. 1) and a conversion to 10 km. square (Fig. 2). The species was widespread, recorded in 69 tetrads and 350 km. squares in the three vice-counties.

DISCUSSION

The records indicate that *Arvicola* is still widespread in N.E. England, but particularly common in the lower Tyne Valley, the Derwent Valley and the subsidence ponds and wetlands associated with the coalfield of S. E. Northumberland. There is little evidence to indicate any major change in the pattern of distribution of the species. The only other useful comparative data (Arnold, 1978) is reproduced here as Fig. 3; Arnold records 30 x 10 km. squares in comparison to this surveys 35, and the most noticeable difference is the large block of records associated with the R. Derwent/lower R. Tyne system. Records from the south of V.C. 66 also fill a major gap.

The survey suffers from the major deficiencies associated with enlisting the help of casual recorders - for example large numbers of records from the same popular locality, few records from remote upland areas, and the failure to reach the public in certain areas. The latter case appears to hold true for the Berwick region, where little publicity was gained and response to the survey poor. In spite of these shortcomings, some useful records have been obtained which will form a baseline for future work.

ACKNOWLEDGEMENTS

All members of the Natural History Panel helped to promote the survey in their region, and thanks are due to John Mennar (Hartlepool Museum), Denise Cutts (The Dorman Museum Middlesbrough), Ken Sedman (Cleveland Museum Service), Tim Pettigrew, John Bainbridge and Bob Boyne (Sunderland Museum), Tony Tynan, Eric Morton, Judith Hebron, Chris Brewer and Andrew Newman (The Hancock Museum, Newcastle). Financial support was provided by Tyne and Wear County Council, Middlesbrough Council and the North of England Museums Service. Richard Aspinall of the Department of Geography, University of Newcastle provided computing expertise, for which we are indebted.

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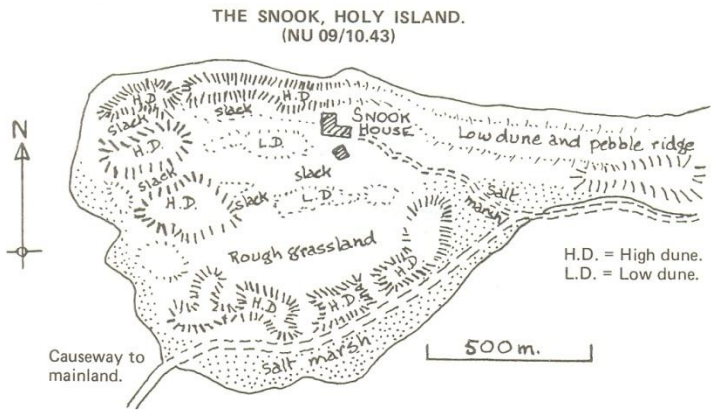
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**ENTOMOLOGICAL INVESTIGATION OF THE SNOOK', HOLY ISLAND, PART OF
THE LINDISFARNE N.N.R., DURING 1984 - 1986
J. D. Parrack, 1 Woodburn Drive, Whitley Bay**

INTRODUCTION

The Snook consists of a confused array of sand dunes, dune slacks, rough grass-land and salt marsh some 1,700 metres long and varying between 120 and 800 metres wide, being joined to another extensive area of drier, higher dunes on the main part of Holy Island at its eastern extremity by a narrow neck of pebble ridge. As such it forms a reasonably self-contained unit, and has the advantage of being sufficiently far away from the main village for light trapping and other techniques to be possible without exciting local comment. The Survey was undertaken under the auspices of the Nature Conservancy Council, as part of their policy to investigate the general status of invertebrates on their reserves, and it is expected that reports on other similar surveys will follow in due course.

The dune systems are developed on clay 'hard pan' and underlying sandstones, and due to the impermeable nature of these layers the slacks often contain (in some cases virtually permanent) standing fresh water, while those on the south side in particular receive variable salt water seepage. Most of the dunes are mature, but new systems are being built on the north-facing foreshore, while on the south side wind erosion can at times cause problems.



Due in part to variations in humidity and salinity between different sites, the dune and dune slack flora is rich and diverse, but the first southerly chain of slacks dune is now backed by an area invaded by plants of rough grassland, including thistles and other Compositae. While the thistles in particular are much enjoyed by day and night flying Lepidoptera and various Diptera, the habitat is attracting many of the commoner grassland moths, which now swarm on the Snook in appropriate season. To what extent these species are invading the dunes proper is problematical, but as many of them are root feeders, there is some danger that they could prove of significance in tending to destabilise the dune systems.

In Adventitious scrub willow, birch and hawthorn are also host plants for a wide variety of resident Lepidoptera, some of which are very local in the north-east. In a 'good' season for larvae, the willow and birch may be literally defoliated, with the result that many larvae undoubtedly die of starvation, and colonies may suffer: in some cases transference to the abundant *Salix repens* in the dune slacks provides a life-line (and explains the annual abundance of the Garden Tiger (*Arctia caja*), which typically transfers to that plant in its later instars). The few stunted conifers on the Snook do not at present seem to be of any entomological significance.

The Survey was conducted on lines similar to those used for three Northumberland Wildlife Trust Reserves in previous years (Parrack, 1984), i.e. working for a week- end at 2-3 week intervals, and concentrating mainly on the Lepidoptera, with more casual investigation of other orders, mainly Diptera and Trichoptera, as time and weather allowed. In addition, previous records have been consulted and are included herewith as appropriate.

RESULTS

Poor weather conditions during the early months of each year prevented any significant outdoor work until June so that a number of early species (though, hopefully, little of conservational value) have doubtless been missed. This apart, trapping returns were generally excellent, with each Heath trap often taking over 300 moths in a night. Sighting of the traps was relatively unimportant, suggesting that most species range widely over the Snook during the night, with very few exceptions - but notably the Dog's Tooth (*Lacanobia suasa*) which was localised on the salt marsh ESE of Snook House, and the Sand Dart (*Agrotis ripae*) found only at the high water mark elsewhere on the Snook. In view of the size and relative uniformity of the catches over the three years of operation, it is considered that good coverage at least for the great majority of the Macrolepidoptera has been obtained.

The Survey yielded:-

Butterflies- 13 species, of which 7 breed regularly, and 2 (Dark Green Fritillary and Grayling) are of particular interest. Four further species have been recorded from Holy Island.

Macro-moths- 117 species, of which at least 86 are regarded as breeding or having bred recently. Of these, at least 15 are of particular interest in conservational terms. Eleven further species have been recorded either elsewhere on Holy Island, or outside the period of the Survey .

Micro-moths-55 species, of which about four are of conservational interest,

Diptera-82 species so far identified, including several new vice-county, county and even north-east records. Several predatory species are of interest.

Trichoptera-13 species, all common but not all typical of the habitat.

Sand dune species

Here the White-line Dart (*Euxoa tritici*) is abundant, with Archer's Dart (*Agrostis vestigialis*) well represented and Coast Dart (*E. cursoria*) rather less so, but some particularly fine forms of both the latter species. J. W. Philipson found the Sand D me (*A. ripae*) 'common' in 1970, but the Survey only yielded two specimens, both in 1986. The Portland Moth (*Ochropleura praecox*) and the White Colon (*Sideritis albicolon*) both have smallish but apparently stable colonies, but the status of two other species is very much in question. On the night of 5th July 1985, a humid night of light W. wind, single examples of Heart and Club (*A. clavis*) and Shore Wainscot (*Mythimna litoralis*) were obtained, the latter badly worn. The former is known from Cocklawburn Dunes (c. 7 km. NW) and the latter from Low Newton Links (c. 22 km S) as their only presently recorded breeding stations respectively in Northumberland though *M. litoralis* was recorded on Holy Is. at the turn of the century. The status of both these species needs further investigation, though it is unlikely that either now breeds on the Snook.

The two important butterflies, Dark Green Fritillary (*Argynnis aglaja* - food- plants *Viola* spp.) and Grayling (*Hipparchia semele* - foodplants various sweet grasses) are both dependent, as with several of the moths already referred to, on the maintenance of open, sweet grassland on the mature dunes. The dune slacks also contain *Viola* spp., but of more significance is the presence of large quantities of Creeping Willow (*Salix repens*) the principal food plant of the Portland Moth. This same foodplant also supports the voracious larvae of the Fox Moth (*Marcothylacia rubi*), later instars of the Garden Tiger, and various of the Microlepidoptera and less important Geometrid moths.

The willow, birch and hawthorn bushes in the slacks support a variety of species, among which the Poplar Hawk (*Laothoe populi*), the very voracious Buff-tip (*Phalera bucephala*) and the majority of the Prominents (spp, 1994-2020) may be mentioned. The Buff-tip larvae do the most damage in 'good' years, but the species that suffer most from food shortage would appear to be the other Prominents, which are all in short supply- indeed it seems not unlikely that they may from time to time near extinction, the stock being replenished by overflow from the nearby Kyloe Woods, some 4-5 km. W.

Salt Marsh species

Species deserving mention here include a good colony of the Saltern Ear (*Amphipoea fucosa* ssp. *peludis*), and the Dog's Tooth - taken for the first time in 1986 by the Warden, P. Corkhill, both at light and at sugar, the first records for Northumberland for this century. Rather disappointing was the apparent scarcity. of microlepidoptera in this habitat - possibly due to too frequent inundation at high tides.

Rough grassland species

This is the host-habitat of some 50% of the island's lepidopterous fauna, of which several species can reach almost plague proportions. It was often possible to take in one trap over 100 of White-line Dart, Large Yellow Underwing (*Noctue pronuba*), Smoky Wainscot (*Mythimna impure*), Straw Underwing (*Thalophila matura*), Dark Arches (*Apamea monoglypha*) and Common Rustic (*Mesapamea secalis*).

Of more interest in this habitat was the presence of small numbers of The Shears (*Hada nene*), local in Northumberland, and a thriving colony of Hedge Rustic (*Tholera cespitis*), an even scarcer species - as is The Uncertain (*Hoplodrina alsines*) (which seems to vary markedly in abundance from year to year. The Cloaked Minor (*Mesoligia furuncula*), very characteristic of dune grassland elsewhere in the County, was unaccountably scarce, and no specimens of the streaked form ab. *latistriata* that occurs on the nearby mainland were encountered. Microlepidoptera, notably Crambid moths, abound in this habitat, some being of rather local occurrence.

Diptera

Pending further details on the identification and distribution of some specimens, it remains to be said that several species new to the vice-county (68). Northumberland (N) and even Northumberland and Durham (ND) as indicated in the specific list have been obtained (though it must be acknowledged that v.c. 68 has been little worked for this order). Of particular interest is the presence of a number of Calypterate flies of parasitic habit.

One of the commonest flies of the dune/sweet grassland habitat is the red-bodied *Eriothrix rufomaculata* which swarms on the flowerheads of Compositae during the summer months. It is parasitic in the larval stage on a variety of Noctuid moths, while the rather less plentiful *Siphonia geniculea* may be more restricted to the Agrotid moths. The massive *Echinomyia grossa*, a distinctly local species in Northumberland, is probably confined to larvae of the Fox Moth in this situation. *Cynomyia mortuorum* is another large, brightly coloured species likely to attract the attention.

Trichoptera

All species obtained were quite common, but there were three (*Agapetus fuscipes*, *Hydropsyche siltalai* and *Polycentropus flavomaculatus*) that are more typically associated with streams of at least moderate gradient, and therefore presumably originating from at least as far as the Kylee Hills drainage system, some 5 km. WSW.

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LEPIDOPTERA

B.& F.No.	Species	Relative Abundance on The Snook
HEPIALIDAE		
0014	<i>Hepialus humuli</i> Linn. Ghost Moth	Scarce
0017	<i>Hepialus lupatinus</i> Linn. Common Swift	
0018	<i>Hepialus fusconebulosa</i> DeG. Map-winged Swift	
ZYGAENIDAE		
169	<i>Zygaena filipendulae</i> Linn. N-b. 6-spot Burnet	Abundant. H. T. Eales had several ab. <i>flava</i> in 1966, and a few since, but none seen in 3 years of Survey.
(0171	<i>Zygaena loniceræ</i> Schev. N-b. 5-spot Burnet ssp. <i>latomarginata</i> Tutt.	. 1970. R. F. Bretherton. No other records).

GRACILLARIDAE		
0294	<i>Aspilapteryx trinsipennella</i> Zell.	
GLYPHPTERIGIDAE		
0391	<i>Glyphipterix simplicicella</i> Steph. Cocksfoot Moth	
0396	<i>Glyphipterix fuscovirella</i> Haw.	New v.c. 68 Common
0397	<i>Glyphipterix thraonella</i> Scop.	Common
YPONOMEUTIDAE		
0401	<i>Argyresthia laevigatella</i> H.-S.	
0410	<i>Argyresthia brockella</i> Hb.	
0421	<i>Argyresthia curvella</i> Linn.	Common
ELACHISTIDAE		
0610	<i>Elachista argentella</i> Cl.	Common
OECOPHORIDAE		
0670	<i>Depressaria dauella</i> D. & S.	30/8/1985 only
0672	<i>Depressaria pastinacella</i> Dup. Parsnip Moth.	Common
0692	<i>Agonopterix subpropinqua</i> Stt.	Scarce
0697	<i>Agonopterix arenella</i> D. & S.	Rather scarce
0698	<i>Agonopterix linarella</i> D. & S.	
0713	<i>Agonopterix angelicella</i> Hb.	
GELECHIIDAE		
0787	<i>Bryotropha terrella</i> D. & S.	Quite common
0811	<i>Scrobipalpa samandensis</i> Plaff. ssp. <i>plantaginella</i> Stt.	Quite common
0829	<i>Caryocolum marmoretum</i> Haw.	
MOMPHIDAE		
0885	<i>Monpha conturbatella</i> Hubn.	Scarce
COCHYLIDAE		
0966	<i>Cochylis atricapitana</i> Steph.	
TORTRICIDAE		
0972	<i>Pandemis heparana</i> D. & S. Dark Fruit-tree Tortrix	Common
0990	* <i>Aphelia unitana</i> Hb.	Has PRDB status. 1 on 16/6/1984; usually regarded as upland species
1014	* <i>Iotrius rectifasciana</i> Haw.	6/7/1985. First record for Northumberland
1029	<i>Eana ossana</i> Scop.	
1048	<i>Acleris variegana</i> D. & S. Garden Rose Tortrix	Common
1076	<i>Olethreutes lacunana</i> D. & S.	Common
1083	<i>Helva subferana</i> Haw.	Common
1119	<i>Ancylix geminana</i> Don.	Abundant some years
1147	<i>Epinotia cruciana</i> Linn. type and f. <i>angustana</i>	Abundant some years
1151	<i>Epinotia stroemiana</i> Fabr.	Common
1186	<i>Epiblema farfarae</i> Fleck.	Fairly common
1187	<i>Epiblema costipunctana</i> Haw.	15/6/1986 (1), may be overlooked among previous sps, in catch
1197	<i>Eucosma campolliana</i> D. & S.	Fairly common
1200	<i>Eucosma hohenwartiana</i> D. & S.	
1201	<i>Eucosma cana</i> Haw.	Commoner than previous sp.
1279	<i>Dichrorampha acuminatana</i> Lien. & Zell.	17/8/1985(2)
PYRALIDAE		
1293	<i>Chrysoeuchis cubella</i> Linn.	Fairly common
1300	* <i>Crambus pratella</i> Linn.	Common-a local species
1301	<i>Crambus nemorella</i> Hb.	Common
1302	<i>Crambus perlata</i> Scop.	Fairly common, c. 90% are f. <i>warringtonellus</i>
1303	<i>Agriphila selasella</i> H. b.	Seems very scarce, but difficult to separate from hordes of <i>tristella</i>
1304	<i>Agriphila straminella</i> D. & S.	Abundant
1305	<i>Agriphila tristella</i> D. & S.	Abundant
1309	* <i>Agriphila geniculea</i> Haw.	Fairly common some years
1333	<i>Scoparia pyraetella</i> D. & S.	Common
1334	<i>Scoparia umbiquadis</i> Treit.	Common
1336	<i>Eudonia pallida</i> Curt.	Rather scarce
1342	<i>Eudonia angustea</i> Curt.	Common

1376	<i>Eurhypana hortulata</i> Linn.	
1388	<i>Udea elutalis</i> D. & S.	Common
1432	<i>Anerastia lotella</i> Hb.	Rather scarce
PTEROPHORIDAE		
1509	<i>Stenoptilia pterodactyla</i> Linn.	Rather scarce
PIERIDAE		
(1545	<i>Collas croceus</i> Geoffr. Clouded Yellow	Several in 1877)
1549	<i>Pieris brassicae</i> Linn. Large White	Scarce: casual migrant
1550	<i>Pieris rapae</i> Linn. Small white.	Rather scarce: on migration
1551	<i>Pieris napi</i> Linn. Green-veined White	Common breeding res.
1553	<i>Anthocharis cardamines</i> Linn.	2 on the Lough. 22/5/1976: not on the Snock
LYCAENIDAE		
1561	<i>Lycaena phlaeus</i> Linn.	Scarce most years: may breed
1574	<i>Polyommatus icarus</i> Rott. Common Blue	Common resident
NYMPHALIDAE		
1590	<i>Vanessa atalanta</i> Linn. Red Admiral	Migrant in variable nos.
1591	<i>Cynthia cardui</i> Linn. Painted Lady	Migrant in variable nos.
1593	<i>Aglais urticae</i> Linn. Small Tortoiseshell	Migrant: may occasionally breed
1596	<i>Nymphalis antiopa</i> Linn. Camberwell Beauty	One in village 19/9/1925)
1597	<i>Inachis io</i> Linn. The Peacock	Scarce, irregular migrant
SATYRIDAE		
1621	* <i>Hipparchia semele</i> Linn. Grayling	Variable breeding colony
1626	<i>Mantola jurtina</i> Linn. Meadow Brown	Common resident
1621	<i>Coenonympha pamphilus</i> Linn. Small Heath	Common resident
1629	<i>Aphantopus hyperantus</i> Linn. The Ringlet	Breeding elsewhere on Holy Is. in 1986:TM)
LASICAMPIDAE		
(1637	<i>Lasiocampa quevau</i> Linn. Oak Eggar	22/8/1971-Larva JDP 31 /5/1974-Imago seen in flight IDW). Casual
1638	<i>Microthylacia rabi</i> Linn. Fox Moth	Common resident
1640	<i>Philudoria potatoria</i> Linn. The Drinker	Abundant resident
DREPANIDAE		
1651	<i>Clix glaucata</i> Scop. Chinese Character	Scarce resident
GEOMETRIDAE		
1708	<i>Idaea dimidiata</i> Huft. Single-dotted Wave	Rather scarce
1713	<i>Idaea aversata</i> Linn. Riband Wave	Rather scarce resident
1727	<i>Xanthorhoe montanata</i> D. & S. Silver-ground Carpet	Scarce resident
1728	<i>Xanthorhoe fluctuata</i> Linn. Garden Carpet	Small numbers most years
1732	<i>Scotopteryx chenopodiata</i> Linn. Shaded Broad-bar	Resident, increasing
1738	<i>Epirrhoe alternata</i> Mull. Common Carpet	Common resident
1742	<i>Camptogramma bilineata</i> Linn. Yellow Shell	Abundant resident
1752	<i>Cosmorhoe ocellata</i> Linn. Purple Bar	Common resident
1755	<i>Eulithis testata</i> Linn. The Chevron	Very common resident
1756	<i>Eulithis populata</i> Linn. Northern Spinach	Scarce resident
1758	<i>Eulithis pyraliata</i> D. & S. Barred Straw	Fairly common resident
1762	<i>Chloroclysta cirrata</i> Linn. Dark Marbled Carpet	Scarce
1764	<i>Chloroclysta truncata</i> Huft. Common Marbled Carpet	Rather scarce
1777	<i>Hydriomena furcata</i> Thunb. July Highflyer	Common resident
1819	<i>Eupithecia exiguata</i> Hb. Mottled Pug	Fairly common resident
1825	<i>Eupithecia centaureata</i> D. & S. Lime-speck Pug	Scarce resident
1830	<i>Eupithecia absinthiana</i> Cl. Wormwood Pug	Scarce
1834	<i>Eupithecia vulgata</i> Haw. Common Pug	Fairly common resident
1838	<i>Eupithecia icterata</i> Vill. Tawny Speckled Pug	Fairly common resident
1906	<i>Opisthograpta luteolata</i> Linn. Brimstone Moth	Increasing
1913	<i>Emmonus alniaria</i> Linn. Canary-shouldered Thorn	Fairly common resident
1921	<i>Crocallis elinguarita</i> Linn. Scalloped Oak	Scarce but? increasing
1937	<i>Peribatodes rhomboidaria</i> D. & S. Willow Beauty	Rather scarce resident
1954	<i>Bupalus piniaria</i> Linn. Bordered White	Casual (from Kyles?)

	SPHINGIDAE	
(1972)	<i>Agrus convolvuli</i> Linn. Convolvulus Hawk	30/8/1917: AC per GB)
(1973)	<i>Acherontia atropos</i> Linn. Death's Head Hawk	22/5/1935: FCG per RC. Imago, suspected newly emerged)
1981	<i>Laotroa populi</i> Linn. Poplar Hawk	Common resident
1984	<i>Macroglossum stellatarum</i> Linn. Hummingbird Hawk	1/7/1986, CC.
1987	<i>Hyles gallii</i> Rott. Bedstraw Hawk	26/8/1979: 2 larvae 2/9/1979: 4 larvae. DRH, PW, GWWW).
1991	<i>Oeilephila elpenor</i> Linn. Elephant Hawk	Scarce, probably intermittent breeder
1992	* <i>Oeilephila porcellus</i> Linn. Small Elephant Hawk	Scarce resident, probably decreasing
	NOTODONTIDAE	
1994	* <i>Phalera bucephala</i> Linn. Buff-tip	Fairly common resident: numbers fluctuate
1995	<i>Cerura vinula</i> Linn. Pass Moth	Fairly common resident
1997	* <i>Fucalea furcula</i> Cl. Sallow Kitten	Scarce resident
2000	<i>Notodonta dromedarius</i> Linn. Iron Prominent	Scarce resident or casual
2003	<i>Eligmodonta ziczac</i> Linn. Pebble Prominent	Common resident
2006	<i>Pheosia gnoma</i> Fabr. Lesser Swallow Prominent	Very scarce or casual
2020	<i>Diloba caeruleocephala</i> Linn. Figure of Eight	Resident, breeds
	LYMANTRIDAE	
2026	* <i>Orgyia antiqua</i> Linn. The Vapourer	28/9/1985: several in <i>The Lanning</i> , TM)
	ARCHIDAE	
2056	<i>Paraxemia plantaginis</i> Linn. Wood Tiger	Common resident
2057	<i>Arctia caja</i> Linn. Garden Tiger	Abundant resident
2060	<i>Spilosoma lubricipeta</i> Linn. White Ermine	Seems scarce
2061	<i>Spilosoma luteum</i> Hufn. Buff Ermine	Scarce
2064	<i>Phragmatobia fuliginosa</i> Linn. Ruby Tiger	2/10/1971: larvae abundant, BW., IOW. 22/5/1976: larvae JDP).
2069	* <i>Tyria jacobaeae</i> Linn. The Cinnabar	Larvae abundant: imagines variable nos.
	NOCTUIDAE	
2081	<i>Euxoa tritici</i> Linn. White-line Dart	Abundant
2082	<i>Euxoa nigricans</i> Linn. Garden Dart	Probably only casual
1983	* <i>Euxoa cursoria</i> Hufn. Coast Dart	Resident in fair nos.
2085	<i>Agrotis vestigiaria</i> Hufn. Archer's Dart	Fairly common resident
2087	<i>Agrotis segetum</i> D. & S. Turnip Moth	Erratic; status unclear
2088	* <i>Agrotis clavus</i> Hufn. Heart and Club	5/7/1985-only record
2089	<i>Agrotis exclamatoris</i> Linn. Heart and Dart	Common resident
2093	* <i>Agrotis ripae</i> Hb. Sand Dart	Common in 1970 JWP: in Survey 2 only, 1986
(2098)	<i>Axylia putris</i> Linn. The Flame	1965; on Ragwort by day. MRY)
2099	* <i>Ochropleura praxos</i> Linn. Portland Moth	Rather scarce resident
2102	<i>Ochropleura plectra</i> Linn. Flame Shoulder	Common resident
2107	<i>Noctua pronaba</i> Linn. Large Yellow Underwing	Abundant resident
2109	<i>Noctua comes</i> Hb. Lesser Yellow Underwing	Abundant resident
2110	<i>Noctua fimbriata</i> Schreb. Broad-bordered Y. U.	1/8/1986(1) PC. Casual
2111	<i>Noctua janthina</i> D. & S. Lesser Broad-bordered Y.U.	Fairly common resident
2114	<i>Graphophora augur</i> Fabr. Double Dart	Common resident, fluctuates
2118	<i>Lycophotia porphyrea</i> D. & S. True Lover's Knot	Casual (from Kylee or Ross)
2119	<i>Peridroma saucia</i> Hb. Pearly Underwing	28/9/1985-only record
2120	<i>Diarsia mendica</i> Fabr. Ingrailed Clay	Surprisingly rather scarce though also recorded in 1965
2126	<i>Xestia c-nigrum</i> Linn. Setaceous Hebrew Character	Erratic, prob. only cas.
2130	<i>Xestia bejs</i> D. & S. Dotted Clay	Common resident
2133	<i>Xestia sexstrigata</i> Haw. Six-striped Rustic	Common resident
2134	<i>Xestia santhographa</i> D. & S. Square-spot Rustic	Very common resident
2135	<i>Xestia agathina</i> Dup. Heath Rustic	30/8/1985-Only record
2147	<i>Hada nana</i> Hufn. The Shears	Fairly common resident
2152	* <i>Sideritis albicolon</i> Hb. White Colon	Rather scarce
2154	<i>Mamestra brassicae</i> Linn. Cabbage Moth	Scarce: status uncertain
2158	<i>Lacanobia thalassina</i> Hufn. Pale-shouldered Brocade	Rather scarce

2159	* <i>Lacania sasua</i> D. & S. Dog's Tooth	Only discovered in 1986 by PC; probably scarce resident
2163	<i>Ceramica pisi</i> Linn. Broom Moth	Common resident
2167	* <i>Hadena perplexa</i> D. & S. Tawny Shears	15/6/1984-only record: probably resident elsewhere on Holy Is.
2176	<i>Cerapteryx graminis</i> Linn. Antler Moth	Common in 1924; stable, moderate population today
2177	* <i>Tholera cespitis</i> D. & S. Hedge Rustic	Fair-sized colony
(2178)	<i>Tholera decemalis</i> Poda Feathered Gothic	18/1/1955 JK4 & IN.; no reason why it should not still be present)
2190	<i>Orthosa gothica</i> Linn. Hebrew Character	Only late-flying individuals encountered; no doubt others of this family will be present earlier
2192	<i>Mythimna conigera</i> D. & S. Brown-line Bright-eye	Scarce, but prob. resident
2193	<i>Mythimna ferrago</i> Fabr. The Clay	Fairly common resident
2198	<i>Mythimna impura</i> Hb. Smoky Wainscot	Abundant resident
2199	<i>Mythimna pallens</i> Linn. Common Wainscot	Fairly common resident
2201	* <i>Mythimna litorealis</i> Curt. Shore Wainscot	5/7/1985, 1 worn specimen Previously rec. in 1901. (H.B.N.C., Ref. 2)
2205	<i>Mythimna comma</i> Hb. Shoulder-striped Wainscot	Scarce and erratic
2216	<i>Cucullia umbratica</i> Linn. The Shark	29/6/1986-only record PC.
2229	<i>Dasyphila templi</i> Thunb. Brindled Ochre	1928, GB.
2231	<i>Aporophylla luteolata</i> D. & S. Deep-brown Dart	8/9/1984-only record
2250	<i>Blepharita adusta</i> Esp. Dark Brocade	Very scarce, probably casual
2263	<i>Agrochola iota</i> Cl. Red-line Quaker	Fairly common resident
2264	<i>Agrochola maculenta</i> Hb. Yellow-line Quaker	Casual only
2270	<i>Omphalocella lanosa</i> Haw. Lunar Underwing	Fairly common resident
2273	<i>Xanthia togata</i> Esp. Pink-barred Sallow	Fairly common resident
2274	<i>Xanthia ictertia</i> Hufn. The Sallow	Common resident
2284	<i>Acronicta psi</i> Linn. Grey Dagger	Common resident
2293	<i>Cryphia domestica</i> Hufn. Marbled Beauty	Scarce; probably resident elsewhere on Holy Is.
2299	<i>Amphipyra tragopogonis</i> Cl. Mouse Moth	Common resident
2302	<i>Rusina ferruginea</i> Esp. Brown Rustic	Scarce; probably only casual
2303	<i>Thalassophila matura</i> Hufn. Straw Underwing	Abundant resident
2321	<i>Apamea monoglypha</i> Hufn. Dark Arches	Abundant resident
2322	<i>Apamea lithosylaea</i> D. & S. Light Arches	Thinly distributed; probably resident
2326	<i>Apamea crenata</i> Hufn. Cloud-bordered Brindled	Erratic, but probably resident
2330	<i>Apamea remissa</i> Hb. Dusky Brocade	Fairly common resident
2334	<i>Apamea soritens</i> Hufn. Rustic Shoulder-knot	Fairly common resident
2339	<i>Oligia latruncula</i> D. & S. Tawny Marbled Minor	Fairly common resident
2340	<i>Oligia fasciuncula</i> Haw. Middle-barred Minor	Common resident
2341	<i>Mesoligia faruncula</i> D. & S. Cloaked Minor	Surprisingly scarce
2342	<i>Mesoligia litorea</i> Haw. Rosy Minor	Common resident
2343	<i>Mesapamea sectata</i> Linn. Common Rustic	Abundant resident
2350	<i>Photedes pygmaea</i> Haw. Small Wainscot	Common resident
2353	<i>Luperina testacea</i> D. & S. Flounced Rustic	Abundant resident
2358	* <i>Amphipoea fucosa</i> Freyer esp. <i>pallidis</i> Tutt. Saltern Ear	Thriving colony
2360	<i>Amphipoea ocellus</i> Linn. Ear Moth	Fairly common resident
2361	<i>Hydracna micacea</i> Esp. Rosy Rustic	Very common resident
(2364)	<i>Gortyna flavago</i> D. & S. Frosted Orange	1928, GB. No apparent reason why not taken now)
2381	<i>Hoplodrina alsines</i> Brahm. The Uncertain	Not very frequent, but resident; rather erratic
2382	<i>Hoplodrina blanda</i> D. & S. The Rustic	Fairly common resident
2387	<i>Caradrina morpheus</i> Hufn. Mottled Rustic	Fairly common resident
2389	<i>Caradrina clavipalpis</i> Scop. Pale Mottled Willow	Scarce, but probably resident
2394	<i>Silbia anomala</i> Haw. The Anomalous	Common-and since at least 1972 JWP.
2425	<i>Colocassia coryli</i> Linn. Nut-tree Tussock	10/8/1984- Larva on sallow; almost certainly casual (from Kyloe)
2434	<i>Diachrysis chrysis</i> Linn. Burnished Brass	Fairly common
2441	<i>Autographa gamma</i> Linn. Silver Y	Fairly common; casual
(2462)	<i>Calistege ni</i> Cl. Mother Shipton	1/6/1968 THE).

DIPTERA

TIPULIDAE

Nephrotoma submaculosa Edw.

Tipula paludosa Mg.

Pedicia rivosa Linn.

Erioptera stictica Mg.

ANISOPODIDAE

Sylvicola fenestralis Scop.

BIBIONIDAE

Bibio marci Linn.

Dilophus femoratus Mg.

STRATIOMYIDAE

Nemotelus notatus Zett. (ND)

Nemotelus uliginosus Linn. (N)

RHAGIONIDAE

Chrisopilus cristatus F.

Rhagio scolopacea Linn.

Rhagio tringarius Linn.

Rhagio nigiventris spp? (N)

THEREVIDAE

Thereva amulata F.

Thereva nobilitata spp. gp. (N)

ASILIDAE

Philonicus albiceps Mg.

BOMBYLIIDAE

Phthiria pulicaria Mikán (ND)

EMPIDIDAE

Platypalus pallidiventris Mg.

Hybos culiciformis F.

Pararhamphomyia simplex Zett. (ND)

Empis (Xanthempis) punctata Mg.

Empis (Kriptempis) livida Linn.

Empis (Pachymeria) tessellata F.

Empis nuntia Mg.

DOLICHOPODIDAE

Dolichopus diadema Hal. (ND)

Dolichopus nubilus Mg. (ND)

Dolichopus plumpius Seop.

Dolichopus unguulatus Linn.

Hydrophorus ocean us Maeq. (N)

Medetera petrophiloides Parent (N D)

Syntormon pallipes F. .

Machaerium maritimae Hal. (ND)

Campsicnemus scambus Fal.

SYRPHIDAE

Syrphus ribesii Linn.

Metasyrphus corollae F.

Epsyrphus balteatus DeG.

Scaeva pyrastris Linn.

Sphaerophoria scripta Linn.

Syrirta pipiens Linn.

Lejogaster metallina F.

Platycheirus angustatus Zett.

Melastostoma scalare F.

Cheilosia albitarsis Mg.

Rhingia campestris Mg.

Helophilus pendulus Linn.

Eristalis horticola DeG.

Eristalis intricarius Linn.

Eristalis nemorum Linn.

Eristalis pertinax Scop.

Eristalis tenax Linn.

CONOPIDAE

Sicus ferrugineus Linn (68)

TEPHRIDIDAE

Xyphosia militaria Schrank.

HELCOMYZIDAE

Helcomyza ustulata Curtis (ND)

Heterocheila buccata Fal. (ND)

COELOPIDAE

Coelopa frigida F.

CHAMAEMYIIDAE

Chamaemyia flavipalpis Hal.

HELEOMYZIDAE

Trixoscelis obscurella Fal. (ND)

SCIOMYZIDAE

Knutsونيا albiseta Scop.

TETHINIDAE

Tethina albosetulosa Strobl. (ND)

TACHINIDAE

Eriothrix rufomaculata DeG.

Siphonia geniculata DeG.

Echinomyia grossa Linn.

SARCOPHAGIDAE

Sarcophaga carnaria Linn.

CALLIPHORIDAE

Cynomyia mortuorum Linn.

Lucilia caesar Linn.

Lucilia illustris Mg.

SCATHOPHAGIDAE

Scathophaga litorea Fal. (ND)

Scathophaga stercoraria Linn.

FANNIIDAE

Fannia coracina Loew.

MUSCIDAE

Drymeia hamata Fal.

Hydrotaea dentipes F.

Hydrotaea irritans Fal.

Phaonia incana Wied.

Phaonia perdita Mg. (N)

Helina duplicata Mg.

Helina laetifica R.-D.

Helina obscurata Mg.

Hebecnema umbratica Mg.

Spilogona baltica Ringd. (ND)

Macrorchis meditata Fal.

Dexiopsis lacteipennis Zett. (ND)

Coenosia tricolor Zett.

TRICHOPTERA
RHYACOPHILIDAE
Agapetus fuscipes Curt.
POLYCENTROPIDAE
Polycentropus flavomaculatus Pict.
HYDROPSYCHIDAE
Hydropsyche siltalai Dohl.
LIMNAPHILIDAE
Stenophylax permistus McL.

Grammotaulius nigropunctatus Retz.
Halesus radiatus Curt.
Limnephilus affinis Curt.
Limnephilus auricula Curt.
Limnephilus incisus Curt.
Limnephilus luridus Curt.
Limnephilus marmoratus Curt.
Limnephilus spersus Curt.
Limnephilus vittatus Fab.

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GB = G. Bolam. AC = A. Chapman. CC, PC = C. & P. Corkhill. RC = R. Craigs. HTE = H. T. Eales. FCG = F. C. Garrett. DRH = D. R. Hammersley. TM = T. Melling. JKM = J. K. Morton. IN = J. Newton. JDP = J. D. Parrack. JWP = J. W. Philipson. BW, I DW = B. & I. D. Wallace. PW, GWMW = P. & G. W. M. West. MRY = M. R. Young.

*= species of conservational interest.

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THE USE OF ALDERS IN LAND RESTORATION IN COUNTY DURHAM

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INTRODUCTION

Alders are generally found by the sides of streams and in wet places in wood- lands where the soils are well supplied with organic material and the essential nutrients nitrogen, phosphorus and potassium. This short account deals with the unusual success of two alders, common alder, *Alnus glutinosa* (L) Gaertn., and grey alder, *A. incana* (L) Moench, in the very different habitats of abandoned pit heaps where they are playing an important part in the establishment of the primary stage of wood- lands. They are hardy, grow rapidly and produce abundant leaf litter which initiates the humus accumulation so essential in young developing soils. Furthermore, their roots develop nodules containing micro-organisms (*Frankia* strains) which can take in nitrogen from the air and make it available to the host and possibly to the roots of other plants nearby.

Common Alder (*Alnus glutinosa* (L) Gaertn.)

This tree is a native of Britain and in moist loam soils it makes very rapid growth $1\text{m}\cdot\text{y}^{-1}$ at age 10y) and reaches maturity an 18-24m; in the most favourable places may reach 30m. The tree which is not particularly attractive, has narrow form with ascending branches, is open leaved and gives a moderate amount of shade. In porous

soil the leaves of the common alder are subject to attack by insects and the leading stems are prone to dieback. However this may be followed by regeneration from the base.

In Durham the common alder is widely distributed, except on the Magnesia Limestone tract (see p. 31), it rarely occurs naturally away from water and is useful in forestry mainly as a nurse crop. It is found in the well-known S.S.S.I. at South Burn Valley, Waldrige Fell (Jeffreys, 1916) where, between the stream and the base of the steep valley slopes, the alder wood represents a unique woodland community named by Wheeler (1975) the *Osmundo-Alnetum-chryso-splenietosum*.



Fig. 1. Leaves of (a) common alder, (c) grey alder (2/3). Female catkins (b) are comparable but usually larger in common alder.

The leaves are roundish (obovate-orbicular) with a wedge-shaped base and a blunt tip. The notch at the end of the main vein (see Fig. 1) is a key feature for identification. They have a waved and toothed margin, are bright green and glabrous on both sides with 4-7 pairs of veins. In their young condition the leaves are covered with hairs and are sticky to the touch and it is to this fact that the name *glutinosa* refers.

Grey Alder *Alnus incana* (U Moench)

Although this tree was introduced from Europe into Britain about two hundred years ago, it has been used only sparingly in plantations and has failed to gain a regular place in British forestry. Until recently it was not known in Durham but now it can be seen growing strongly at the sites described below (see p. 31). It is exceptionally hardy and like the common alder it makes rapid-growth to 20-24m and in favourable conditions may also reach 30m. The grey alder has a pleasing shape, provide~ goo~ shad~ and is a better survivor than the common alder. It is said to tolerate acid and alkaline soil (see p. 32). The grey alder suckers vigorously and this habit is regard as a nuisance in park planting and possibly accounts for its unpopularity.

The leaves are ovate to elliptic, acutely pointed and boldly toothed (see Fig. 1), they are dark green and glabrous and below have greyish hairs. There are 10-15 pairs of veins. Unlike common alder the leaves are not glutinous when young but like all Alders they show no autumn colours before falling in November.

Both common and grey alders are catkin-bearing trees; the female catkins develop into woody 'false-cones' that hang on the trees throughout the winter and then for several years afterwards making alders easy to identify.

Performance of alders on colliery spoil

Colliery spoil, consisting largely of shales, is deficient in nitrogen and phosphorus and is low in potassium; it contains no organic matter, lacks structure and consequently it is unstable and subject to erosion by rain water. However, if left undisturbed this inhospitable material first becomes weathered into fine particles and is then colonised by grasses, herbs and trees (Richardson, Shenton & Dicker, 1971). After 40-60 years the surface material, although only slightly richer in essential nutrients, develops into a deep friable loam and it was into material of this sort that much of the mixed tree planting on abandoned pit heaps was carried out in 1956/57 by Durham County Council. The performance of the alders at three such sites, Croxdale (Crox) Littleburn (Lit) and Ludworth (Lud) after ten and twenty years of growth is given as average tree heights in Table 1. In our experiments the trees planted into bare shale invariably died back, and furthermore alders were not found as natural colonists on any pit heap site in Durham.

In full reclamation, as carried out at the Roddymoor Colliery Site (see Richardson, 1985 for details), any structured soil present on the heaps was lost when they were regraded. Remaining were the shales in more or less the same condition as when they were originally tipped. To begin the process of soil formation elaborate cultivations were carried out and finally a grass seeds mixture (112 kg ha⁻¹) with complete NPK fertiliser (750 kg ha⁻¹) was sown. The grassland produced was an anti-erosion measure which also started the recycling of nutrients, added organic matter to the surface layer and initiated the long process of soil formation. As on the naturally colonised spoil the grass sward formed an insulating layer against high temperatures at the surface and kept the root zone cool and moist (Richardson, 1958). Three areas of Roddymoor (referred to as Rod 1, 2, 3) were planted with alders in the mixture of trees in 1969/70 when the grassland was one year old. This ground was different from that of Croxdale, Littleburn and Ludworth in having no structure, but it had the compensating advantages of the necessary nutrients and a grass cover to improve the fertility. The performance of the trees is given in Table 1.

Table 1. Average height in metres of common and grey alder on various colliery spoil sites (see text) after 10 and 20 years (*not planted).

Species	Age	Crox.	Lit.	Lud.	Site			Kim.	Scrub.	M.F.S.
					Rod 1	Rod 2	Rod 3			
Common Alder	10y	*	3.7	3.3	3.3	3.3	3.7	4.0	5.3	8.0
	20y	*	6.3	5.5	6.0	5.6	5.6	6.9	7.1	9.5
Grey Alder	10y	3.6	4.2	3.3	4.3	3.6	3.4	4.5	4.6	7.8
	20y	6.1	6.3	5.6	7.5	6.2	6.2	8.1	8.2	14.5

The main woodland at Roddymoor (Richardson, 1985) is referred to as Roddymoor Pit Wood (Rod PW_) in Table 1. Here 2000 alders were planted with other trees in 1969/70 into the same type of grassland as Rod 1, 2, 3 except for some extra amendments. These were given as top soil in some planting holes and as spot treatments to all trees of 113g each of bone meal, hoof and horn, and basic slag spread over three years. At the Kimblesworth site (Kim) the soil also received fertiliser prior to grass sowing and each tree was given 75g single superphosphate at the planting in 1974/75. The tree heights given in Table 1 for 20 years on reclaimed sites are based on measurements made in 1986, (i.e. at 16 years old, except for Kimblesworth which was 10 years old).

In moist fertile soil (M.F.S.) alders can reach heights of around 28m (Mitchell 1982) and for the purposes of comparison the heights given for trees aged ten and twenty years are quoted in Table 1. A further comparison is afforded by the performance of alders planted on the site of a partially cleared hawthorn scrub at Roddymoor in 1969/70. The soil was high in organic matter, well-structured but poor in minerals compared with agricultural pasture.

At Roddymoor Pit Wood in 1980 (i.e. at ten years old) measurements were also made of the herbage present in the understory (mainly *Dactylis glomerata* and *Festuca rubra commutata*) and the soil nitrogen, organic matter and pH. The results are given in Table 2.

Table 2. Measurements of the herbage; the soil pH, organic matter and nitrogen content at 10cm depth in a grey alder grove at Roddymoor Pit Wood in 1980.

	pH	Organic matter (%D.W)	Nitrogen (NO ₃ ppm)	Herbage (gm ⁻²) F.W.	D.W.
Shade	4.6	8.8	4.1	1232	320
Partial shade	4.9	8.8	4.0	184	88
Open ground	4.1	8.1	3.7	48	20

Discussion

The two alders rapidly outgrew the other trees and for seven years they were the most important component of these mixed woodlands planted on colliery spoil. They provided shade for the understory and acted as a nurse crop for the pine, poplar, rowan and willow which were slow to establish on these sites.

As Table 1 shows there was no significant difference between the growth of common alder on the sites where organic matter had accumulated (Crox. Lit, Lud) and those given light fertiliser dressings (Rod 1,2,3). The one treatment was as good as the other in promoting growth. Where additional fertiliser and some top soil were given (Rod PW., Kim) growth was enhanced to 2m after 5 years, 4m after 10 years and 7m after 20 years, i.e. about half that normally associated with fertile soils. Weathered colliery spoil is drier than the natural habitats of alders, but as Richardson and Greenwood (1967) have shown, although the surface in summer dried out to

the permanent wilting point, at the root depths the soil remains moist. Nevertheless below when common alder was 2-3m tall, leaf fall occurred in some trees towards the towards the main stem. It appeared that in summer, as the rate of transpiration approached or exceeded the rate of uptake by the roots, the available water was only able to sustain a reduced number of leaves. At this time the tree was vulnerable to attacked by insects and invariably premature fruiting took place. The main stem became bowed and gradually died back, but almost simultaneously vigorous growth began in shoots at the base with the result that the check to growth in height was often a temporary one. In rare cases where several checks occurred over a period of years large bushes rather than trees were formed. Even the retarded trees made a valuable contribution to the woodland. The grey alder showed no signs of apical dieback or attack by insects. This may be because it was more suited to the prevailing low soil nutrient and water content and could therefore withstand attack by insects or, being a recent introduction, it remains so far immune. After ten years of steady growth the grey exceeded the common alder in height at four out of the seven sites and by up to 1.0m. At the present rate of growth the difference is likely to be about 1.5m after 20 years. It grew densely- leaved horizontal branches which provided much valuable shade and hence conserved soil moisture. At Roddymoor Pit Wood after five years growth (i.e. in 1974) the grassland except in the shade of the alders was beginning to thin out. Its survival during the great drought of 1976 was largely due to the presence of the alders because little or no shade was cast at that stage by the other trees. At age ten years there was complete ground cover in those parts of the woodland where alders grew, but the growth was more vigorous in the shade than in the open glades. Surprisingly, the organic content of the soil was more or less uniform throughout (see Table 2). A contribution to the shade was made by the remarkable suckering displayed by the grey alder at Roddymoor Pit Wood and Kimblesworth. Ten years after planting the suckers were 2-3m high at a distance of 3m radius from the main stem and there were up to 100 of them. Such vigorous suckering, which did not occur at either the old colliery sites (Crox, Lit, Lud) or the reclaimed sites (Rod 1, 2, 3) may be related to the comparatively high levels of NPK which were available there.

In addition to promoting growth of understory grasses, the alders acted as a nurse crop by protecting the slower establishing species from extremes of heat and cold and drying winds. On all the sites it was noticeable that for about eight years the other tree species (with the possible exception of birch) were slow to establish. This was striking in rowan which in the first eight years had only attained a mean height of 1.6m but accelerated to more than 3.7m in the following eight years.

There is conflicting evidence about the contribution made by the nitrogen fixing nodules to the growth of companion species. For example, Sprent (1979) cited evidence for the release of nitrogen fixed in the nodules into the soil which produced increased growth of ash, pine and poplar when used in mixed plantations with alder. However, it has also been argued that in young, vigorous alders as the nitrogen is fixed it is all passed to the rest of the plant and little will be released into the soil. Jobling (1980) examined alders growing on seven spoil sites and, although nodules regularly occurred on the roots, he could find no evidence that their presence benefitted the companion species in the plantations. Wheeler *et al.* (1986) reported that after three years growth the soil under red alders (*A. rubra*) showed no significant increase in total nitrogen. The results given in Table 2 show that even after ten years

there were small but insignificant differences between the nitrogen in the soil distances of 0.3m (shade), 1.0m (partial shade) and 2.0m (open ground) from the main stems of grey alders. One explanation could be that at this site there was a release of nitrogen from root nodules *via* the soil to other plants and it is possible that much of the nitrogen fixed by the young trees was retained for their own leaf production and then reabsorbed by them as the litter decayed after leaf fall. The bright green colour of the grasses near to the alders may indicate that they too have benefitted from the recycling process.

Even a short discussion of alders in County Durham would be incomplete without some reference to their performance on Magnesian Limestone soils. Booy (1975) in her survey of natural and seminatural woodlands found that the common alder only occurred occasionally (12% of sites examined) and, as previously explained, the grey alder was not present. Experiments reported by Whyte and Sisam (1949), Sprent (1979) suggested that alders would be successful on raw untreated limestone quarry waste. Such sites differ from colliery spoil in being alkaline (pH = 8.0), but resemble them in being moist and deficient in nitrogen, phosphorus and potassium. Our preliminary experiments on Magnesian Limestone waste showed that the two alders failed just as completely as they did on colliery waste but succeeded when the waste was treated with either topsoil or a complete balanced fertiliser.

Acknowledgements

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BATS IN DURHAM

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INTRODUCTION

Bats are not the easiest of animals to study. They are nocturnal, spend half the year in hibernation and their roosts are usually inaccessible without long nets and ladders. Perhaps this is why few naturalists have investigated Durham's bat-fauna in the past.

THE WORK OF GEORGE BOLAM

The only worker to make any significant contribution was George Bolam (1859-1934) who published details of his bat survey in the 'Transactions of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne' between 1923 and 1926. Bolam saw Pipistrelles (*Pipistrellus pipistrellus*), Noctules (*Nyctalus noctula*) and Brown Long-eared Bats (*Plecotus auritus*) in both Northumberland and Durham. He found Natterer's (*Myotis nattereri*), Daubenton's (*M. daubentonii*) and Whiskered Bats (*M. mystacinus*) in Northumberland and knew that the last two species also occurred in Co. Durham. Unfortunately, attempts to trace the original records have not been successful. All of the species known to Bolam can be found in Co. Durham to this day: He can be forgiven for not finding Brandt's Bat (*M. brandtii*), as this was not described until 1970.

OTHER PRE-1983 RECORDS

Specimens of Part-coloured Bat (*Vespertilio murinus*), Hoary Bat (*Lasiurus cinereus*) and a specimen labelled Nathusius' Pipistrelle (*P. nathusii*) are lodged in local museums. These specimens and their relevance to Durham's bat fauna will be discussed elsewhere. The report of Lesser Horseshoe Bat (*Rhinolophus hipposideros*) in 'The Natural History of Upper Teesdale' (ed. M. Bradshaw 1976) is open to question. The most northerly confirmed record of this species comes from near York, and in recent decades its range has contracted down to Derbyshire. The Lesser Horseshoe Bat is certainly absent from Teesdale today and its former presence in that area seems unlikely. Menzel and Perkins include a reference to Notch-eared Bat (*M. emarginatus*) in their 'Catalogue of Mammalia of Northumberland and Durham of 1864. This is a~ only report of this European species anywhere in the British Isles, and in the nee of supporting evidence, it cannot be accepted.

DURHAM BAT GROUP

Durham Bat Group (DBG) was founded in 1983 to record and conserve bats in the old county of Durham (vice-county 66). Its active members are licensed by the Nature Conservancy Council to carry out roost visits and other necessary Work. DBG has always applied the most rigorous criteria to its records. Regardless of source the minimum requirement for acceptance is identification in the hand by someone who is familiar with the species concerned. In some cases this has necessitated confirmation visits by experienced bat group members. DBG does not accept casual records without supportive field-notes nor records of bats identified in flight. The only exceptions to this rule have been the colonies of bridge-roosting Daubenton's Bats. In both cases these have been identified by means of a bat-detector In conjunction with intensive observation of the bats' flight patterns.

THE STATUS OF BATS IN DURHAM

In its four years of operation, DBG has established itself as one of the leading bat groups in the country. 150 bat-roosts have been located in all parts of the county, though it is becoming clear that the greatest concentrations of bats lie in the valleys of the Derwent, Wear, Tees and their tributaries. The Pipistrelle is the commonest bat in Durham, as it is in the rest of the country. Because of this species' adaptability, a relatively high proportion (36%) of roosts have been found in modern houses (<25 years old). All the other Durham bats prefer older houses or use more specialised roosts.

PIPISTRELLE (*Pipistrellus pipistrellus*)

The commonest bat in vc 66 and the only species which can make use of modern estate housing; it is hard to know which is cause and which is effect! 72 roosts are known, including one in Gainford where a maximum of 633 bats have been counted, making it the largest known roost in the county. The mean roost size in Co. Durham is 102.

Pipistrelle colonies are very mobile and use a number of roosts, depending upon the prevailing weather. The colony at Shincliffe, the best known to date, has been found to roost in at least 11 houses on the estate. Pipistrelle roosts and the conditions under which they are used is the subject of a great deal of DBG's current research effort.

NOCTULE (*Nyctalus noctula*)

Thirteen roosts are known from Co. Durham. Noctules are reasonably distinctive in flight, and whilst DBG would not accept a flight record for the compilation of distribution maps, it is clear that Noctules can be found wherever there is sufficient woodland. Typically they roost in hollow trees but two Durham colonies have shown unique individuality as one roosts in a crack in the chimney of a Consett house and the other roosts in a crack in the Lockhaugh viaduct. The mean roost size in Co. Durham is 36.

LEISLER'S BAT (*Nyctalus leisleri*)

Leisler's Bat has not yet been discovered in Co. Durham. A single female was found at Craggside, Northumberland last winter. The nearest known colony of Leisler's Bats is near Sheffield and the species' centre of distribution is Ireland. The Crag

specimen may therefore have flown over Durham to reach its destination. Leisler's Bat is migratory and it would seem as if the Cragside bat flew in exactly the wrong direction. This phenomenon, termed reverse migration, is well known in migratory birds. Last winter's occurrence may be unique but a precedent has been set and bat-workers in Durham should double-check the identity of all small Noctules, especially in late Autumn and Winter.

BROWN LONG-EARED BAT (*Plecotus auritus*)

Brown long-eared Bats are the common house-bat of country areas throughout Southern Britain. However, in Durham they are relative rarities with only 12 roosts known. Colonies usually choose older houses with complex roofs, so roosts are often rather grand. Long-eared bats do not usually move from house to house during the course of the breeding season but may control their temperature by moving within the roof. Colonies are not large and the mean colony size in Co. Durham is 20.

NATTERER'S BAT (*Myotis natterii*)

Only one breeding colony of Natterer's Bats is known in vc 66 and that is at Long Newton near Eaglescliffe. Numbers are difficult to assess but it is thought to contain about 50 bats. Natterer's Bats are also known to roost on the Gibside Estate, though this is thought to be a hibernaculum rather than a breeding roost. It is not known if the Gibside animals belong to the colony which breeds in Slaley Forest. An individual thought to be a Natterer's Bat has been found hibernating in caves near Stanhope. It was not possible to confirm the identification as handling hibernating bats can prevent them from surviving the winter.

WHISKERED BAT (*Myotis mystacinus*)

This is the commonest house-bat after Pipistrelle, and in houses over 25 years old, one is almost as likely to encounter Whiskered Bats as Pips. Whiskered Bats seem to be able to cope with smaller roofs and urban environments rather better than Brown Long-eared Bats. Indeed, one Whiskered roost is situated in the middle of Spennymoor shopping centre. The roost at Middleton-in-Teesdale Field Studies Centre was thought to be the largest in the country but a recent trap by a large team of bat-workers showed that the roof houses two separate colonies and that possibly up to half of the bats are Pipistrelles.

Whiskered Bat colonies are mobile but not to the same extent as Pipstrelles. Studies on the roost complex centred on Escomb church show that numbers fluctuate between various roosts, indicating movement of individuals rather than migration of complete colonies. Whiskered Bats are often difficult to count. The average colony size is thought to be 20.

BRANDT'S BAT (*Myotis brandti*)

Brandt's Bats have been positively identified at four roosts through the capture of males which may be easily identified by penis shape. Unfortunately most Whiskered/Brandts bats roosts contain only females and immature animals which can only be separated on their dentition. The feature is obscure and difficult to see on a cleaned skull in good light. It is not feasible on an uncooperative bat by torch light.

DAUBENTON'S BAT (*Myotis daubentoni*)

Breeding roosts for this species are known only from two bridges over Tees; one at Croft, the other at Egglestone Abbey. The bridge across the Derwent Rowlands Gill also supports Daubenton's Bats, though breeding has not yet been proven. There are thought to be about 30 bats in the Egglestone Abbey colony and about 80 using the Croft Bridge roost.

Once roosts have been located and identified they are monitored for population changes. The results of this quantitative work are beyond the scope of this paper, however, they do indicate that the bats of Co. Durham are under just as much pressure as they are elsewhere in Britain. As the majority of information about the location of bat-roosts comes from the public, DBG is keen to spread its net to trap information as widely as possible .. The authors would welcome any further information about bat-roosts in Durham and sincerely hope that this article will need drastic revision in the near future.

WINTERING NOCTULES: THE BIOMETRICS OF A COLONY OF DURHAM BATS

Gill Hinchcliffe, 5 Rose Terrace, Water houses, Durham

INTRODUCTION

The collection of data relating to colonies of bats during hibernation is difficult to undertake. In particular, well-protected and concealed sites, such as hollow trees or wall cavities, are difficult to locate and impractical to investigate. Although bats may rouse themselves during hibernation and may move from one site to another even when temperatures are below zero, human disturbance is not only stressful but also potentially fatal. Bat metabolism is linked to core temperature. So if a bat is woken, or even just warmed, vital fat stores are depleted and it may not have sufficient energy reserves to survive until insects are available in the spring. These practical and ethical difficulties means that little information is available on the biometrics of hibernating bats. Durham Bat Group had an unusual opportunity to examine a small colony of Noctules (*Nyctalus noctula*) last winter. The intention of this paper is to make the biometric data more widely available. Details of the conditions of captivity, feeding techniques and construction of an alternative hibernaculum can be found elsewhere (Durham Bat Group Report 1985, Bat Chat No. 7 July 1986).

NOCTULE HIBERNACULA

The Noctule is the largest species of bat known in Co. Durham and it commonly uses tree-cavities for both summer and winter roosts. Colony sizes vary enormously from less than ten to, occasionally, more than a thousand (Strelkov 1969). Research in the Netherlands (Sluiter, Voute and van Heerdt 1973) suggests that a large cluster of bats (c. 100) inside a very large tree provides the most favourable conditions for successful noctule hibernation.

THE DISCOVERY OF THE COLONY

During the last week of January 1986 some diseased elms were felled on private land on the banks of the River Tees near Darlington. One falling tree struck a 300-year old beech, severing a large limb. As the branch crashed down from a height of ten metres, torpid Noctules were strewn across the bank. As soon as he found out what had happened, the landowner arranged a search of the area and 21 bats were collected. When examined by bat-workers, two male Noctules were found to be dead, although neither showed any external damage. The survivors were checked for injury (happily none was found), sexed, weighed and forearm measurements were taken. The bats were held in captivity until it was safe to return them to a special hibernation box erected on the original site. They all survived and were reweighed shortly before release. The data collected are shown in Table 1.

Table 1. Measurements taken from Noctule Bats

	<i>Forearm (mm)</i>	<i>Length</i>	<i>Weight on Collection (g) 28.4</i>	<i>Weight prior to Release (g) 26.8</i>
MALES	51.5		28.4	26.8
	51.8		26.0	26.5
	51.9		25.5	25.7
	52.3		22.1	23.5
	52.4		24.2	23.5
	52.6		23.0	24.0
	53.0		26.7	26.0
	53.4		26.1	25.7
	53.6		26.5	25.7
	FEMALES	50.5		19.3
51.5			28.0	27.3
52.0			23.5	24.5
52.0			24.0	22.5
52.9			25.0	24.0
53.5			25.6	26.0
53.8			24.4	25.5
55.8			24.0	23.5
56.0			31.5	31.0

DISCUSSION

COMPARISON WITH PUBLISHED DATA

The colony was initially made up of 12 males and 9 females. This does not provide a large enough sample to enable meaningful inter-sexual comparisons to be made. However, all the measurements are within the expected ranges for Noctules:-

Forearm 47 - 55 mm (Stebbing's 1986a)

Weight 15 - 40g (Stebbing's 1986b)

The mean forearm length was 52.55mm for males and 53.11 mm for females, a difference of just over 1%. This is less than expected as female forearm lengths average 2 - 3% larger than males in all bat species (Stebbing's 1986a).

WEIGHTS AND SURVIVABILITY

It can be seen that while some individuals put on weight during the ten days of captivity, a number showed a decrease. Insufficient is known about the ranges of weights and changes in weight during hibernation to be able to comment on the chances of survival of these individuals. However, it was suggested, after their release (R. E. Stebbings pers. com.) that 21g may be the critical weight for this species by late January. However, when the hibernation box was opened in mid-May, the only corpse found inside was that of a male and our lightest males weighed 23.5g on release. On the same evening that the artificial hibernaculum was examined, 47 Noctules were counted emerging from a very large beech tree only 100m along the bank from the original hibernation site, giving every indication that the colony had survived the winter successfully.

No attempt was made to assess the age structure within the colony. With aging skills gained over the summer, it would have been interesting to find out if the heaviest females were mature individuals which had bred successfully for several years, as suggested by Stebbings (1986a).

ACKNOWLEDGEMENTS

Durham Bat Group would like to thank the landowner involved for his immediate concern for the colony and his subsequent interest in their welfare. We are keen to hear of any similar incidents, past or future, and to investigate potential tree roosts in order that they might be protected during felling operations.

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BY THE WAY

Secretaries of Societies and other contributors to the Vasculum should send their notes to the Editor before 15th March. 1987.

BUTTERFLIES, 1986

As predicted in the July Vasculum our resident butterflies, on average, have had a very poor year. Those species which normally emerge in spring were hardest hit Small Tortoiseshell, Peacock, Green-veined White and Orange-tip all emerged to find temperatures far too low for much flying and although we saw a few of each, numbers were well down on previous years. Having failed to fly very much, few females would find a mate and reproduction must have been on a very reduced scale. July emergences of Small Tortoiseshell were completely omitted and the autumn brood for hibernation fared little better. We saw no more than half a dozen individuals. Their favourite patch of hemp agrimony flowers on the River Banks at Chester-le-Street, normally patronised by up to 50 individuals every day in previous years, had not a single visitor. Peacocks were likewise in short supply as were later broods of Green-veined Whites and Wall Browns, although the last seemed to fare better than the others. We shudder to think what the Orange-tip population will be like next year. In general most of the other residents were down on previous years abundance, but those emerging in July and August were not so badly hit as the early species.

Immigrants were almost completely absent in our counties. We saw a few Red Admirals in October and these were a delight in such a barren season. Painted Ladies, however, were completely absent. The only migrant moth to do reasonably well was the Silver Y which was quite plentiful in the latter part of September and throughout October.

Altogether this has been a disastrous season which will take several years to correct. It is hoped that the weather is a little kinder next spring.

INSECT RE-ESTABLISHMENT FOR CONSERVATION

The Joint Committee for the Conservation of British Insects, consists of representatives from our major national entomological societies with observers from interested Government Agencies like the Nature Conservancy Council, Forestry Commission etc. It has recently produced a Code of Conservation Practice for re-establishing or reinforcing species in areas where extinction has occurred or is threatened. A leaflet explaining all its recommendations is available from the Biological Records Centre, Monks Wood, The Royal Ent. Soc. of London, 41 Queen's Gate or several of the other bodies represented on the Joint Committee.

It should be noted that it gives advice on re-establishment rather than establishment *ab novo* which is arguably unacceptable for purposes of conservation.

The following points summarise the main recommendations, but anyone contemplating carrying out such a project should read through the whole of the recommendations first and seek detailed advice from N.C.C. or the Joint Committee.

1. Consult widely before deciding to attempt re-establishment.
2. Every re-establishment should have a clear objective.
3. The ecology of the species to be re-established should be known.
4. Permission should be obtained to use both the receiving site and the source of material for re-establishment.
5. The receiving site should be appropriately managed.
6. Specific parasites should be included in re-establishment.
7. The numbers of insects released should be large enough to secure re-establishment.
8. Details of the release should be meticulously recorded.
9. The success of re-establishment should be continually assessed and adequately recorded.
10. All re-establishments should be reported to the Biological Records Centre and the Joint Committee.

THE SOCIETIES

THE NORTHERN NATURALISTS' UNION

Mr. Nicholas Cook led some 20 members on the 175th Field Meeting to Longhorsley Moor, Morpeth on 28th June 1986. The day was hot and sunny, with a gentle southeasterly breeze. The moor is one of the few lowland heaths in Northumberland and has been identified as being of wildlife value by both the Northumberland Wildlife Trust and the Nature Conservancy Council. A rich entomological fauna was soon observed with the capture of moths including: Clouded Border (*Lomaspilis marginata*), Beautiful Yellow Underwing (*Anarta myrtilli*), Brown Silver-line (*Petrophora chlorosata*) and Common Heath (*Ematurga atomaria*). The empty cocoon of an Emperor Moth was also found. The butterflies included the common 'whites', many Small Heaths (*Coenonympha pamphilus*) and a solitary Peacock (*Inachis io*).

The birch woodland at the north of the moor was rich in bird song and from a vantage point above the wood the territorial songs of several species could be clearly identified. Birds observed during the afternoon included chiff-chaff, meadow pipit and kestrel.

The varied nature of the site consisting of heather, invading bracken and birch woodland provided a diversity of habitats which will require careful management if the character of the site is to be maintained. Part of the moor (which is registered common land) has already been fenced to provide cattle grazing.

A moth trap was operated the previous night at High Barns Farm and the following species were identified:— Chinese Character (*Cilix glaucata*). Common Carpet (*Epirrhoe a/temata*). Brimstone (*Opisthograptis luteolata*). Lunar Thorn (*Selenia lunularia*). Elephant Hawk (*Deilephila elpenor*). Pebble Prominent (*Eligmodonata ziczac*). Lesser Swallow Prominent (*Pheosia gnoma*). Coxcomb Prominent (*Ptilodon capucina*). White Ermine (*Spilosoma lubricipeda*). Bright-line Brown-eye (*Lacanobia oleracea*). Broom Moth (*Ceramica pisi*). Knot Grass (*Acronicta rumicis*). Clouded Bordered Brindle (*Apamea crenata*). Rustic Shoulder-knot (*Apamea sordens*) and Marbled Minor (*Oligia strigilis*).

It is unfortunate that such a valuable entomological site is under threat from agriculture and lack of correct management, but hopefully this decline will shortly be arrested as Longhorsley Moor was designated as a Site of Special Scientific Interest (SSSI) during July, by the Nature Conservancy Council.

The 176th Field Meeting was held in Hamsterley Forest on 6th September 1986, when nearly 60 members and friends gathered at the forest's administrative centre. There had been some early rain but by the time the party moved off under the guidance of the head forester, Mr. Gordon Simpson, it was fair and sunny and sheltered by the trees.

We were taken (in a convoy of 20 plus cars) to selected points in the forest where the wildlife value was especially high. The first stop was at a point where *Pyrola minor* and *Lycopodium selago* were a feature. Here an unusual gall caused by an unknown species of *Rhabdophaga* (a Cecidomyid fly) was examined on the *Salix aurita* plants. Significantly, *Salix caprea*, *Salix atrocinerea* and *Salix purpurea* were all present in the vicinity but were untouched by the gall-former which had attacked every single plant of *S. aurita*. Hover-flies were also plentiful in this area and Mr. Simpson was only too pleased to elaborate on these. A fox moth caterpillar and a specimen of the large yellow underwing (*Noctua pronuba*) were also observed. Further stops were made at places where the streams had been dammed and diverted slightly to form ponds for the benefit of aquatic invertebrates. All this time Dr. Davies had been sampling the Diptera of which there were ample supplies and Michael Mann had been using his beating tray to some advantage, recording the larvae of Pebble Hook-tip (*Drepana falcataria*). Coxcomb Prominent (*Ptilodon capucina*). Grey Dagger (*Acronicta psi*) and many unidentified caterpillars of Geometers and Tortrices. We finished up in a boggy patch, recently felled, looking for *Listera cordata*, the Lesser Twayblade, but without success. By this time evening was approaching and the temperature falling when the field secretary, Mr. Derek Pickering, thanked Mr. Simpson for a most interesting and productive afternoon.

The nineteenth Heslop Harrison Memorial Lecture was held on 25th October 1986 in the Community Association lecture theatre at Park View School, Chester-le- Street, by kind invitation of the Birtley and Chester-le-Street Natural History Society. Dr. A. L. Panchen, the speaker, chose as his subject, "Natural History and the Theory of Natural Selection".

He began by showing two vintage books, Paley's Theory of Design in Living Creatures and an early edition of Darwin's Origin of Species. Most of the early naturalists

from John Ray onwards had been concerned principally with listing and classifying species, many of which were being described for the first time. This part of natural history having gone a long way by the end of the eighteenth century, writers then began to speculate on some sort of explanation for relationships and for adaptations in different species. Paley's attempt was one of the first, postulating that everything on earth was there by design, the design of God. Later thinkers were not satisfied that this explained the ingenious adaptations for survival that continually crop up in wild populations. Here several examples were shown on the screen, e.g. a Swallowtail Butterfly with a tail coloured to look like a head so that this would be attacked by a predatory bird rather than the more vulnerable end of the body and the various insects possessing poisons in their make up like the Garden Tiger Moth, Cinnabar and Burnet Moths. Other adaptations for survival were camouflage as in the partridge and its eggs, the shape of some animals e.g. the cheetah's long legs and Batesian mimicry was also mentioned. The question was posed as to how all these adaptations had arisen during the course of evolution. This gave rise to the Theory of Natural Selection as enunciated by Darwin and Wallace. The sequence then is as follows:—

1. More offspring are produced than can possibly survive.
2. Hence there is very high mortality particularly in the young stages, the so-called struggle for existence.
3. There is great variation between individuals of the same species (there was no attempt to explain the origin of variation, indeed Darwin and Wallace did not suggest an answer to this one, although there is little doubt that Darwin was a little worried about it).
4. Advantageous variations are retained and breed through successive generations.

Because natural selection as outlined in the four steps above can explain most of the adaptations it is favoured by all thinking naturalists today.

After questions a very appropriate vote of thanks was moved by Dr. E. Turnbull, after which we moved along the corridor to take the tea provided by the ladies of Birtley and Chester-le-Street N.H.S. In this room, exhibits had been set up by the members. Nick Cook's live insects were a great attraction. He had Giant Stick Insects and caterpillars of a large U.S. silkworm and he sold stick insect eggs, the proceeds going towards the Union's publication funds.

Dr. E. Turnbull put out a collection of photographs showing the wildlife of New Zealand. Dr. Burt showed photographs and slides of the parasitic wasp, *Phaenoserphus viator*, drawing particular attention to the spiral antennae of the male by means of which he grips the female during mating. Mr. Dunn showed series of the four autumn moths, *Epirrata* species, with an explanation of points of difference for identification and some speculation on their recent evolution from a common ancestor. A Durham Trust group also sold Trust goods. Altogether this was a very successful meeting, starting with a lecture of very high quality and followed by spontaneous discussions over a splendid tea. Our thanks must go to the ladies of the host society.

NOTES AND RECORDS

NOTES

An unusual fish disaster at Brasside. During a visit to Brasside Ponds in the late spring of this year a large number of dead perch, all females, were found on the banksides surrounding the ponds. At first it was thought that the mass deaths were due to something poisonous in the water, so specimens were collected and sent off to analysts for tests. To our surprise no poison or any other cause of death was found and it was suggested that they had died of 'spawning stress'. Apparently perch wait until the water temperature rises to a certain critical value before spawning takes place even though their ovaries are burgeoning with eggs. This year the spring was so extraordinarily late that the temperature of the water did not rise sufficiently for spawning until the fish were exhausted with their long wait. The tragedy is that this rare phenomenon will undoubtedly cause a reduction in perch stocks for the next few years.

T.C.D.

The Leopard Moth, (*Zeuzera pryna*) at Peterlee. Two larvae were found under logs, near the Lodge, Stanhope Chase, Peterlee on 2 June 1986. I note from the literature that Cheshire is the northernmost station for this species and also that it has been recorded from 150 different kinds of wood. This would indicate that importation is the most likely explanation for its presence. (House-building and the establishment of new gardens are taking place nearby). Even so the larvae are of markedly different sizes (2cm. and 4cm.). Perhaps they are first and second year caterpillars. They were not found together, so I suspect a colony of sorts must have been established.

C. Gardiner.

Insects. 1986 was a very poor summer for lepidoptera in the Gosforth area: even 'whites' were few, although half a dozen fresh small whites (*Pieris rapae*) in a short length of lane at Low Gosforth on August 10th would suggest that the second brood had been more successful. I did not see a single Small Tortoiseshell (*Aglais urticae*) and only one Meadow Brown (*Maniola jurtina*).

Bumble bees have also been scarce although there were odd *B. lucorum*, *B. lapidarius* and *B. agrorum* in the Low Gosforth area during August.

C. J. Gent.

Odd sightings. There have not been many butterflies about this year but on September 18 I saw a Red Admiral near Ushaw College and another on the East Allen, near Sinderhope on October 14. Also the fruits of the Spindle Tree were well developed at Allen Banks near Plankey Mill on October 18th.

Miss J. Wade.

An unusual bird near Castleside. At approximately 10.30 a.m. on Friday 27 June, whilst walking on the Castleside/Waskerley/Stanhope railway line with my wife, daughter and son-in-law (who is a keen amateur ornithologist) I drew attention to what looked like a Grey Heron directly overhead. From the markings, the colouring and the neck and leg lengths it was identified as a white stork and later confirmed from the book as *Ciconia ciconia*. It was flying on a NW—SE line from the Derwent Reservoir towards Tow Law. I wonder if any other fellow members observed it.

R. Hall.

An unusual fossil from Brunton Bank, Chollerford. A single fragmentary body chamber of the goniatite *Eumorphoceras* sp. (Cephalopoda, Ammonoidea) has been found in the Black Pasture Sill sandstone at Black Pasture Quarry on Brunton Bank (NY931669). Some 15m of ferruginous, decalcified sandstone are exposed in the quarry. The sandstone contains several lenses of fossil brachiopods, mainly *Schelwieiella crenistria* Phillips, preserved as moulds. The goniatite was found in one of these shelly bands in a large loose block of sandstone on the quarry floor. It is an internal mould of part of an outer whorl platycone body chamber and measures 11mm. high and 7mm. wide; the umbilicus and earlier whorls are not preserved. The specimen has gently

curving flanks that culminate in an acutely rounded venter that possibly has been slightly accentuated by crushing. The flanks are smooth with no traces of ribs, but a conspicuous shallow ventro-lateral sulcus, slightly less than 1 mm. wide, is present on both sides. With acute venter and smooth flanks the goniatite appears to be an adult that must have been at least 20mm. in diameter. The dimensions and form of the body chamber suggest that it belongs to an early species of *Eumorphoceras* possibly allied to *E. tournquisti* (Wolterstorff). The specimen is in the collections of the Durham University Geology Department, No. P. 9058.

Eumorphoceras is rare fossil in Northumberland that has been recorded only twice before. An early record by Hedley (1931) from the Thornbrough Limestone is most uncertain. A better record comes from the Throckley Borehole where *Eumorphoceras medusa* Yates was found in shales at 17.68m above the base of the Great Limestone (Rarnsbottom, 1966). Another goniatite, *Cravenoceras leion* (Bisat), has been found in the Great Limestone shales at Greenleighton, Northumberland (Johnson *et al* 1962) and this establishes the horizon as low Namurian Ela basal Pendleian. The other records, including the new specimen from Black Pastures Quarry, support this.

Though abundant in the Carboniferous basins of Yorkshire and Lancashire, and rare in the Midland Valley of Scotland, *Eumorphoceras* does not normally extend into the Northern Pennines and the Borders. Its occurrence at Brunton Bank in a high energy shell bank environment is unexpected. The specimen is probably far travelled and carried northwards by wind and currents either before or after the death of the inhabitant of the shell.

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G. A. L. Johnson.

Humming-Bird Hawk Moth. On Tuesday evening 1st July 1986 I noticed a moth flying with rapid wing beats around the honeysuckle at the end of my garden. It aroused my curiosity so I went down to investigate and I found that it was a Humming Hawk Moth, the first I had ever seen. I noticed the orange/peach colour under its wings and the black and white on the sides of its tail. It stayed only about another 30 seconds before disappearing over the fence. It was feeding on the newly opened blossoms. I suspect that it came here on the recent high pressure system.

Dan Mold.

Purple Hairstreak Butterfly. On July 3rd 1986 I was surprised to see a Purple Hairstreak Butterfly (*Quercusia quercus*) in my garden which backs on to Half Mile Wood/Dukes Wood in Hexham.

Veronica Woolley.

This is a very important observation and if it can be proved to be breeding in the area, it will be the first such record for over 15 years. It is more remarkable in that the area has been intensively searched for that very species during the last 15 years.

Ed.

Red Admirals around Cleadon. On 16th October a single Red Admiral (*Vanessa atalanta*) was seen flying along the edge of the beach at Whitburn. The day was bright with cold sunshine and very little breeze, the time 11.30 a.m. This is one of only four that have come my way in 1986. One was seen in Cleadon in July and two others in the same month on Tunstall Hills. This year, I failed to see any Peacocks or a single Painted Lady, although opportunities to do so were limited.

J. M. Baty.

Some observations from Witton-le-Wear. Now that the Small Skipper season has ended perhaps the following diary of observations at Witton-le-Wear Nature Reserve may be of some interest-

July 10th, first small skippers (*Thymelicus sylvestris*) in flight (2) in the river hide area.

July 11th, river hide area, 9, east end 8.

July 15th, river hide area 16, this colony now spreading to adjacent strips of grassland.
 July 16th, river island inspected, 7 insects.
 July 17th, small colony of *T. sylvestris* found at Stonechester Plantation, Helmington Row, near Crook, where approximately 10 butterflies were seen together with a few very old tattered Large Skippers (*Ochlodes venata*).
 July 20th, river hide area inspected, 21 small skippers.
 July 24th, east end of reserve, 30.
 July 25th, river hide area, 38.
 August 5th, river hide area, 17. East end of reserve, 10.

No Ringlets were seen on the reserve this year. Large Skippers have been fairly numerous; Diny Skippers kept to one small area on the reserve where approximately 12 insects were seen at their peak. In order to encourage the Skipper populations it would be beneficial to thin out the scrub willow and alder to maintain a more open habitat.

Bob Quigley.

Random Notes from West Tyne. With reference to the note in the July Vasculum, I took my first Clouded Silver, *Lomographa temerata* at Allerwash Hall on 28 May 1978 and since then it has been seen regularly within three days of the end of May, this year on 2 June.

I have only once taken the Vestal, *Rhodometra sacraria* and that was at my door light on 6 October 1985.

Melanism has appeared in the Vasculum again recently. Dark but not black Scalloped Hazels (*Odotopera bidentata*) appear at Allerwash, and what a good year for them this has proved to be, appearing in some numbers in the trap from 26 May to 13 July 1986. The all black Peppered Moth (*Biston betularia*) is occasional but lots of jet black Dark Arches (*Apamea monoglypha*) are on the wing at present (August 1986).

The Twin Spot Carpet (*Perizoma didymata*) had an enormous hatch all along the bank of the North Tyne near Wall on 14 July 1986. One put them up every step one took.

Similarly the Chimney Sweeper (*Odezia atrata*) produced a great hatch on 26 June 1986 at the Tyne Watersmeet with dozens flitting in the sun over the long grass and at the same time I was delighted to see for my second time in Northumberland a Large Skipper.

Lastly, getting away from Lepidoptera, in July I saw an otter with a salmon on the bank of the North Tyne.

P. L. Tennant.

RECORDS

LEPIDOPTERA BUTTERFLIES AND MOTHS

- Ectoedemia inttimella* Zeil 66
 Brasside, mines on *Salix atrocinerea*, 20 October 1985; Shotley Bridge, mines on *Salix caprea*, sent by L. Moore, 3 November 1985.
- Ectoedemia heringi* Toll. (*quercifoliae* Toll.) 66
 Waldrige Fell, mines on oak, 9 October, 1985; Moorhouse Wood N.R.; mines on oak, 17 October 1985; Brasside, mines on oak, 29 October 1985; Pockerley Pond N.R., Beamish, mines on oak, 10 October 1985; South Stanley Wood, mines on oak, sent by C. Satterthwaite, 3 January 1986.
- Ectoedemia subbimaculella* Haw. 66
 Brasside, mines on oak, 8 October 1985.
- Ectoedemia albifasciella* Hein. 66
 Annfield Plain, Dodd Ter. mines on oak, sent by L. Moore, det. A. M. Emmet, January 1985, Ebcchester, mines on oak, January 1985, sent by L. Moore, det. A. M. Emmet; Cornsay, mines on oak, 31 January 1985; Castleside, mines on oak, sent by L. Moore, 9 February 1985; Lanchester, mines on oak, sent by L. Moore, 31 January 1985; Brasside, mines on oak, 16 October, 1985; Moorhouse Wood N.R., mines on oak, 17 October 1985; Pockerley Pond, Beamish, mines on oak, 19 October 1985; Moorside, Consett, mines on oak, sent by L. Moore, 18 October 1985. T.C.D.

<i>Ectoedemia argentipedella</i> Zeil.	66
Brasside, mines in birch, 8 and 16 October 1985.	
<i>Stigmella fragariella</i> Heyd. (<i>nitens</i> FOL., <i>gei</i> Wolke.)	66
Shotley Bridge, mines on wild strawberry, sent by L. Moore, 3 Nov. 1985.	
<i>Stigmella aurella</i> Fabr.	66
Hermitage Woods, Chester-le-Street, Feb. 1985; Shotley Bridge, mines on bramble, sent by L. Moore, 3 Feb. 1985; Hawthorn Dene, mines on bramble, 17 April 1985; Waldrige, mines on bramble, 2 May 1985; Darlington, mines on bramble, sent by Miss H. Peacock, 11 Dec. 1985; Moorhouse Wood N.R., mines on bramble, 17 Oct. 1985; South Stanley Wood, mines on bramble, sent by C. Satterthwaite, 3 Jan. 1985.	
<i>Ectoedemia pulverosella</i> Sit.	66
Shotley Bridge, mines on apple, sent by L. Moore, 5 Nov. 1985.	
<i>Stigmella marginicolella</i> Sit.	66
Hawthorn Dene, mines on elm, 2 Oct. 1985; Moorhouse N.R., mines on elm, 17 Oct. 1985; Shotley Bridge, mines on elm sent by L. Moore, 2 Nov. 1985.	
<i>Stigmella continuella</i> Sit.	66
Waldrige Fell, mines on birch, 9 Oct. 1985.	
<i>Stigmella salicis</i> Sit.	66
Waldrige Fell, mines on <i>Salix atrocinerea</i> , 20 Oct. 1985; Brasside, mines on <i>Salix atrocinerea</i> , 29 Oct. 1985; Ebchester, mines on <i>Salix caprea</i> sent by L. Moore, 10 Nov. 1985; Annfield Plain, mines on <i>Salix caprea</i> sent by L. Moore, 9 Nov. 1985; Hamsterley Mill, mines on <i>Salix caprea</i> sent by L. Moore, 8 Dec. 1985.	
<i>Stigmella myrtillella</i> Sit.	66
Annfield Plain, mines very rare on bilberry sent by L. Moore, 9 Nov, 1985.	
<i>Stigmella floslactella</i> Haw.	66
Moorhouse Wood N.R., mines on Hazel, 17 Oct. 1985; Ashtree Lane, High Spen, mines on hazel sent by L. Moore, 24 Nov. 1985.	
<i>Stigmella tityrella</i> Sit.	66
Hermitage Wood, Chester-le-Street, mines on beech, Feb. 1985; dot. A. M. Emmet; Cornsay, mines on beech sent by L. Moore, 31 Jan. 1985; Shotley Bridge, mines on beech sent by L. Moore, 30 Jan. 1985; Hawthorn Dene N.R., mines on beech, 12 Oct. 1984; Milkwellburn Wood, mines on beech sent by L. Moore, 10 Nov. 1985.	
<i>Stigmella perpygmaeella</i> Doubl. (<i>pygmaeella</i> Haw.)	66
Chester-le-Street River Banks, mines on hawthorn, 6 Oct. 1985; Chopwell, mines in hawthorn sent by L. Moore, 3 Nov. 1985.	
<i>Stigella ulmivora</i> Fol.	66
Moorhouse Wood N.R., mines on elm, 17 Oct. 1985; Shotley Bridge, mines on elm sent by L. Moore, 3 Nov. 1985.	
<i>Stigmella hemargyrella</i> Kol 1.	66
Shotley Grove, mine on beech sent by L. Moore Feb. 1985, det. A. M. Emmet; Cornsay, mines on beech, sent by L. Moore, 31 Jan. 1985; Shotley Bridge, mines on beech sent by L. Moore, Jan. 1985; Chopwell, mines on beech sent by L. Moore, 3 Nov. 1985; Ebchester, mines on beech sent by L. Moore, 10 Nov, 1985.	
<i>Stigmella atricapitella</i> Haw.	66
Hamsterley Mill; Ebchester; Dipton (Derwentside); Chopwell Forrest, all sent by L. Moore, Jan. 1985, det. A. M. Emmet; Waldrige Fell, mines on oak Feb. 1985 del. A. M. Emmet and 9 Oct. 1985; Cornsay, mines on oak, sent by L. Moore 3 Jan. 1985; Castleside, mines on oak sent by L. Moore, 1 Jan. 1985; Shotley Bridge, mines on oak sent by L. Moore, 9 Feb. 1985; Moorhouse Wood N.R. mines on oak, 17 Oct. 1985; Pockerley Pond N.R., Beamish, mines on oak, 19 Oct. 1985; Moorside, mines on oak sent by L. Moore, 18 Oct. 1985.	
<i>Stigmella ruficapitella</i> Haw.	66
Hamsterley Mill; Ebchester; Dipton (Derwentside); Chopwell Forest; Shotley Grove, all mines on oak sent by L. Moore and det. A. M. Emmet; Waldrige Fell, mines on oak Feb. 1985, det. A. M. Emmet; Cornsay; Shotley Bridge, Castleside; Lancheater; Annfield Plain, mines on oak sent by L. Moore Jan./Feb. 1985; Hermitage Wood, Chester-le-Street, mines on oak, 5 Oct. 1985, Brasside, mines on oak, 8 and 22 Oct. 1985; Waldrige, mines on oak 9 Oct. 1985; Moorhouse N.R., mines on oak, 17 Oct. 1985; Pockerley Pond, Beamish, mines on oak, 19 Oct. 1985;	
South Stanley Wood, mines on oak sent by C. Satterthwaite, T.C.D.	