

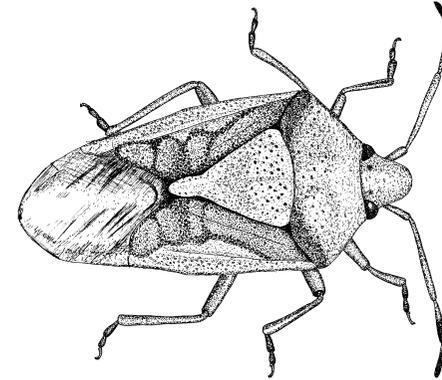
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Juniper Shieldbug

(Stephen Hewitt)

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From the Editor

The interval between this and the previous issue has been notable for two very different events, both extreme in their own way. First, the 'invasion' of Waxwings in late November/early December, which was on an almost unprecedented scale; second, and far less welcome, the widespread flooding of January 2005, which affected Carlisle most of all. I have said a little more about the last-mentioned in the short Editorial Note in this issue. Although that trauma is already receding, it will clearly be some considerable time before all its affects are understood.

'Letters to the Editor' has been suggested as a possible new section in the Carlisle Naturalist. If anyone out there has a burning question, or a topic they wish to air, please submit a letter of no more than 200 words – which the Editor may or may not publish in full! Names and addresses of correspondents will be included. We could probably cope with up to two in any one issue. The purpose would be strictly limited to discussion and sharing of natural history information and ideas. Any offers?

Society matters: It is pleasing to record that the Society has now awarded Life Membership to Geoff Horne and Bob Buchanan. Geoff is a former Secretary and President, with an outstanding contribution to recording the breeding success of Peregrines and other raptors. Bob helped him in much of this work, and was for many years the Society's Treasurer – in times when our finances were a good deal more precarious than of late. We are grateful to both for long and valuable service. (The other Life Members are: John Parker, Derek Ratcliffe, Henry Ruddick).

David Clarke

Publications by Tullie House and/or CNHS members, available from the Tullie House shop or direct from Stephen Hewitt (please add 50p per item if ordering by post). Cheques payable to 'Carlisle City Council'.

- Cumbrian Ladybirds* (2004). A 30-page guide to their identification and distribution, includes useful key, distribution maps and notes on habits. Price: £1.
- Colour Guide to Cumbrian Ladybirds* (2004). A double-sided, non-folding laminated A4 sheet with photographs and identification notes for all Cumbrian species. Price: 50p.
- Cumbrian Dragonflies: a distribution atlas* (2005). A 30-page guide to their distribution: contains maps and notes on the identification and occurrence of all currently recorded species. Price: £1.
- A Checklist of the Butterflies and larger Moths of Cumbria* (2000). A 44-page checklist and guide to current status nationally and in Cumbria and Vice-counties 65, 69 & 70; indexed to common and scientific names; useful literature guide. Price £1.

Watch out for colour-tagged seals

The Museum has received a request for information on sightings of colour-tagged seals. There are a number of seal rehabilitation units in the UK, releasing seals into the sea after various periods of stabilisation, treatment and rehabilitation. Many of these are released with some form of tag inserted in the hind flipper, or occasionally with 'hats' or coloured spots on their heads. Some tags carry specific telephone numbers to contact if they are found on an animal on the shore. However, in many circumstances, tags are sighted at sea without any contact numbers being discernible. Any reports at all of sighted tags will help the rehabilitators to build up information on survival and dispersal of released animals. Please contact me at Tullie House if you see any tagged seals and I will pass on the information to the UK Marine Animal Rescue Coalition, as well as adding the record to our biological records database here.

Stephen Hewitt

5th February 2005

Leader: Geoff Horne

'Wild Goose Chase': Solway coast and Galloway

The now traditional 'Wild Goose Chase' was once again led by Geoff Horne. The day started drizzly but dried up rapidly and was dead calm leading to good viewing conditions, particularly at Newbie. Fourteen people met up at the row of beech trees on the far side of Annan. A distant Buzzard and a large mixed flock of Rooks and Jackdaws but little else so we swiftly moved on to Newbie. There were excellent views of ducks and waders with a raft of approximately 55 Scaup, a busy group of Turnstone and a small number of Ringed Plover. Further out in the estuary, up to 40 Great Crested Grebes were floating on the tide and a Porpoise surfaced a number of times, allowing most people to see it through a telescope. In the hedgerows following Cummertrees there were large flocks of Fieldfares and a mixed group of Tree Sparrows, Yellowhammer and Reed Buntings.

On to Caerlaverock, where the Barnacle Geese were quite close in and vocal. An excellent place for a coffee and sandwich! After a brief stop at Glencaple – with Whooper Swans feeding in the fields, it was on to Crocketford. This was very disappointing compared to previous years with a few Mute Swans but very low duck numbers and no grazing Wigeon flock. We moved up to Carlingwark Loch at Castle Douglas and were rewarded only with Tufted Duck and Coot. As usual the day ended around the shores of Loch Ken. A number of duck species that had eluded us through the day turned up here and looked splendid in the late afternoon sun. Our goose count increased, with Greylags, Pink-feet and Canada Geese all being seen. There was a reasonable number (reported to be 260-280) of the Greenland White-fronts, but unfortunately they were on the far side of the loch and many were hidden behind hedgerows. Fortunately the light was good and identification was possible through the telescopes. Geoff then took us back to the Laurieston road, with several views of Red Kite on the way. Finally we parked along the side of the Kite feeding station and were treated to excellent views of both this species (at least 6 birds) and Raven before we called it a day and made our way back to Carlisle.

Those counting noted that we had seen at least 72 species of bird during the day; amongst the more notable totals not mentioned above had been 200 Whooper Swans and 24+ Buzzards. A big thanks to Geoff for a great day out – as usual.

Anne Abbs

[Two colour-marked Greylags were amongst those seen. Subsequent enquiries by Ian Hartley, who was amongst our party, revealed that the one with grey collar had been ringed on breeding grounds in Iceland in 2000 and had been variously reported in subsequent years from Caithness, Northumberland and Loch Ken – as well as being seen again on the Icelandic breeding grounds; the one with an orange collar had been ringed as an adult at Loch Eye, E. Ross, in Nov 2004. *Ed.*]

Recent Reports

This report covers details submitted via CNHS members in the period since autumn 2004.

In late 2004 the main feature, which has been extensively documented, was an unprecedented invasion of **Waxwings**, moving south through Scotland. From early November onwards, large flocks were located, mainly in urban or suburban localities, often feeding on the large berries of *Sorbus* cultivars. Approximate numbers (from a selection of records) were 300 in Penrith, 250 in Carlisle, 100 at Corby Hill and an incredible 600 or more at Dalston. Smaller groups were also reported in Wetheral, Tesco Carlisle and at Jockey Shield, Geltsdale. By the end of the year most of these flocks had moved on or split up. Some were a garden feature in Houghton (John & Gwen Black) and the last report is from Wigton in February 2005 (Robin Hodgson).

Large numbers of some other species were also reported with up to 300 **Black-tailed Godwits** at Bowness-on-Solway 'railings' from September 2004 (Tristan Reid) and an estimated 400 **Brambling** at Talkin Tarn in mid-winter. In late March/early April, the song from this flock was almost deafening! (GN) Finally for 2004, an unusually late **Osprey** was seen at Cummersdale on 10th November (Keith Temple).

After the year change, a good selection of winter birds was observed in the south Solway area (mostly Frank Mawby and Anne & Mike Abbs). **Short-eared Owls** were noted at Burgh Marsh and Longtown; a **Hen Harrier** at Finglandrigg on 15th February was noteworthy although not unusual, but a **Marsh Harrier** earlier, on 12th January at nearby Bowness Common was very unseasonal. Wildfowl of note comprised a flock of 2500 **Pink-footed Geese** with 100 Barnacles at Newton Arlosh on 16th February and 2 **Pale-bellied Brent Geese** at Border Marsh a few days earlier. There was a massive flock of 6000 **Golden Plover** at Cardurnock on 18th January. Both **Green Sandpiper** and **Jack Snipe** were good finds at Thornhill Meadows on 27th January. 64 **Yellowhammers** in a mixed bird flock at Grune Point on 16th February was another good record. Inland, wildfowl were not a prominent feature of this winter. From my own notes, at Talkin Tarn, **Goosander** were virtually absent this winter, and numbers of **Wigeon** there were extremely low compared to the last few seasons. A little compensation was provided by 2 **Smew** at Tindale Tarn and 3 **Scaup** at Talkin in late March.

In 2005, a few butterflies put in very early appearances during warmer interludes. The earliest so far reported was a **Peacock** at Banks, near Lanercost on 1st February (Richard Little). Several more **Peacocks** were seen in March with a few

Small Tortoiseshells later in that month. Some moths also showed up very early *e.g.* a **Hebrew Character** on 28th January (RL) and a rare example of a post-hibernation **Brindled Ochre** at Milton on 4th April – the first Spring record for Cumbria of this species (GN). Another interesting insect record concerned a **Glow-worm** beetle larva (*Lampyrus noctiluca*) at Little Meldrum wood, Ullswater (NY420226) on 29th March (David Clarke). The species is not often encountered in Cumbria except in the limestone areas of the south.

At the time of writing, the first summer visitors are arriving and, apart from the normal early **Wheatear**, **Chiffchaff** and **Sand Martin**, there have been sightings of **Willow Warbler**, **Swallow** and a very early **Common Sandpiper** at Rockcliffe on 3rd April (per Dorothy Iveson). A **Pied Flycatcher** at Talkin Tarn on 8th April was on the earliest date recorded at this site (GN).

Geoff Naylor

Notes and Records

The great flood of January 2005

The severe flooding experienced in the Carlisle area and Eden valley, which peaked on 8th January 2005, made national, and even international, news. This was caused by a coincidence of unusual meteorological conditions, including exceptional rainfall in the preceding 36 hours, combined with very strong winds driving up already high tides. For a brief period, record river levels were noted. For the lower Eden, these were some 6 metres or more above more usual levels. (The peak at Eden Bridges, Carlisle reached 15.37 metres above Ordnance Datum, exceeding the previous highest flood, of 1822, by over a metre). The immediate impact on the human inhabitants of the area was extensively documented, though the full consequences will take much longer to emerge. The effects on wildlife and sites of natural history interest will likewise take some time to be revealed.

The Environment Agency has of course monitored events in great detail. It has kindly supplied a draft map which shows the maximum extent of the inundation in and around the City – which is available for members to consult at Tullie House.

Water and high winds between them have removed many mature or ageing trees, themselves important habitats for various birds, bats, insects, and epiphytes such as mosses and lichens. The speed of the events and saturation of the ground in the flood plain will have temporarily affected a wide range of burrowing and ground-dwelling species – from small mammals to invertebrates. Along the rivers Eden,

Caldew and Petteril, erosion has re-configured river-beds and shingle deposits, removed unstable banks and even river-cliffs. Some new habitats will have been created by subsequent re-deposition. It will be interesting to see how these events have affected particular species. For example, the recent expansions of the Banded Demoiselle (*Calopteryx splendens*) on the lower Eden may have suffered setbacks; gravelly spawning beds used by Salmon will obviously have been severely changed – ironically in a season which has seen one of the best ‘runs’ of these migratory fish for many years.

Some effects on riverside vegetation, trees especially, are all too obvious. Jeremy Roberts’ note elsewhere in this issue (p. 10) reports on how the Yellow Star-of-Bethlehem (*Gagea lutea*) has fared locally. This scarce and attractive early-flowering bulbous plant has most of its Cumbrian sites in the Eden catchment, and lives on sandy, ‘mobile’, river-banks. Amongst losses that have already become evident, is the solitary tree of the Small-leaved Lime (*Tilia cordata*) at Fishgarth Wood, discussed in Vol 12.1 of this journal. The tree and part of the low cliff on which it grew appear to have been carried away by river levels which, from debris in trees near the site, I measured at some 6.4 metres (20-21 feet) above ‘normal’.

We would like to hear from anyone who has records positive or negative which can be tied in with these momentous and, happily, rare events.

Editor

A Raven nest in the lower Eden valley

Ravens quite often fly between the Pennines and the Lake District, so it was not especially surprising to hear the familiar ‘croak’ over the Eden gorge near Armathwaite on 27th February this year. When the bird remained in the area and flew along the cliffs, often vocal, it seemed to be rather more than a passer-by and made me wonder whether there was a nest with sitting female not far away. Spurred by this indication, seven days later I found the nest, high on an inaccessible sandstone cliff ledge, well-protected from above by a daunting overhang. A bird flew off as I took a photograph from some distance away. Very soon after, it returned to settle into the nest – clearly an incubating female. With the services of Geoff Horne (and a very necessary length of rope!) the nest contents were safely inspected from above on the following day: 6 eggs, a good full clutch. From these observations, it seems likely that egg-laying would have commenced in February.

Observations by others have subsequently emerged, from which it is clear that the nest was constructed in 2005, that at least three young were reared, and that two or

more may have fledged.

Despite the tendency to recent expansion, Ravens nesting along the Eden valley are still few and far between. It is to be hoped that the present site does not suffer the intolerance still illegally meted out to this species in some parts of the county.

David Clarke, Burnfoot, Cumwhitton, Brampton, Cumbria CA8 9EX

The Small Blue Butterfly (*Cupido minimus*) re-discovered at St Bees Head

Whilst at St Bees Head on 31st May 2004, Darren Robson and I noticed a very small dark coloured butterfly flying up from the grassy slopes of the cliff and along the cliff-top at approximately NX942135. I realised at once that this was a female Small Blue – particularly since I had been watching several of this species only an hour previously at Maryport! As is typical with females of this species, it was a dark charcoal-brown on the upper side, with a pale powdery blue colour on the body, diffusely spreading out onto the basal areas of the fore and hind wings.

As we continued to watch, the insect flew down below the edge of the cliff and was lost to view. Within a short time another Small Blue flew past us briefly; this insect was more bluish on the upper wings (grey-blue) indicating a male. Despite searching the cliff tops in the area where we had observed the butterflies, I failed to find any of the usual food plant, Kidney Vetch (*Anthyllis vulneraria*). I assume these individuals were either dispersing from a nearby colony, or that the food plants were on the lower slopes of the cliffs and not visible from the cliff tops.

According to the Biological Records database at Tullie House Museum, the most recent previous record of Small Blue from this area was pre-1909 when Routledge (1909) reported the butterfly to occur on ‘railway banks near St Bees’. This was therefore a particularly pleasing find of what is now a very scarce Cumbrian insect, confined to the Maryport/Workington area.

Reference

Routledge, G.B. (1909) The Butterflies of Cumberland. *Transactions of the Carlisle Natural History Society* **1**: 98-113.

Tristan Reid, 5 Meadow Road, Wigton, Cumbria CA7 9SB

Scarlet Darter (*Crocothemis erythraea*) update

Tristan Reid's fascinating report of a brief encounter with a possible sub-adult male of this European species (*Carlisle Naturalist* **12(2)**, pp. 42-3) at Bowness-on-Solway last year has been considered and accepted by the national Odonata Records Committee. It is thus now listed as one of the six records of this species from the UK. (The other five are from the extreme south.)

A forthcoming article in the journal *Atropos* (Parr, in prep.) will deal with some issues surrounding records of this species. One problem is the remote chance of other species of the genus reaching the UK – e.g. from the Middle East – which could occur naturally. Fortunately, the fact that Tristan's insect was apparently immature (and therefore having emerged not many days before the sighting) makes that eventuality even less likely than it might normally be. However, accidental, or even deliberate, introduction is another possibility, and close similarity between some *Crocothemis* species means that positive identification necessitates examining a specimen in the hand.

This is a good example of the fact that we are often compelled to identify a species 'by default', choosing the most probable *because* (we believe) all other very similar species can be safely deemed highly *improbable*. Amongst dragonflies there are parallel issues with red-bodied darters of the genus *Sympetrum*. There are at least three species in warmer parts of Europe which could all turn up in the UK and which are extremely similar to the ubiquitous Common Red (*S. striolatum*) ... a fact that through global warming we may sooner or later be less able cheerfully to ignore!

Reference

Parr, A. (in prep.) Scarlet Darters *Crocothemis* spp. in Britain. *Atropos*.

David Clarke

Woodmice and the beetle *Leptinus testaceus* Muller (Coleoptera, Leptinidae)

Leptinus testaceus is a flat, yellowish beetle, only 2.5 mm long, wingless and eyeless. The only member of this family in Britain, it lives on the fur and in the nests and runs of mice, moles and voles, and is occasionally found in bumble-bees' nests, decaying leaves – and even once, in Gloucestershire, in the fur of a hibernating Greater Horseshoe Bat in an iron mine. Though widely distributed in Britain, it is, hardly surprisingly, rarely seen.

These habits are the first stage towards a parasitic mode of life (very rare amongst hard-working beetles), but neither the beetle nor its larva harms the 'host' in any way, merely feeding on dead particles of skin and mouldy substances away from the hosts. In Europe, however, there are two other species in the family: one, the Beaver Beetle, is much more adapted to parasitism and never leaves its host; the other lives in the fur of another aquatic mammal, the Russian Desman.

Here at Beckhouse (NY165289) we catch the autumn wave of immigrant Woodmice (*Apodemus sylvaticus*) in live trip-traps and then release them a safe (?) distance away in the oak wood. When I returned to the cottage at dawn on 10th December 2004, a tiny yellow beetle was scampering around the bottom of the plastic box by the emptied trap. I guessed, rightly, that it was *Leptinus*, though I had never encountered the species before.

This is apparently the first record for Cumberland (VC70), though there are older records for Westmorland (VC69) – at Grange-over-Sands in 1866, Roudsea in 1971 and Clawthorpe Fell in 1972.

The previous Christmas, the Woodmice gave me another 'present': on 27th December 2003 there were seven large acorns neatly stowed in the left toe of my walking-boots which had been left unworn in the kitchen for exactly a week. The nearest source of acorns is 50-100 yards away. Rather ungratefully, I hoist them with their own petard, using the acorns to bait the trip-traps thereafter.

David Atty, Beckhouse Mill, Embleton, Cockermouth, Cumbria CA13 9TN

Further records of the seed-beetle *Bruchidius villosus* F. (Coleoptera, Bruchidae) from VC70, Cumberland

David Atty has recently recorded the seed-beetle, *Bruchidius villosus* (Fabricius) as new to Cumbria and VC70, Cumberland (Atty 2004). I also managed to find the beetle at two separate sites in the county during 2004. On 14th June while assisting Stephen Hewitt with a survey of river shingle invertebrates on the River Caldew at Cummersdale, I found several adults of the beetle. They were beaten from large Broom bushes (*Cytisus scolopendrius*) growing on an area of well-vegetated shingle on the eastern bank of the river (NY394522). Due to the hot, sunny conditions at the time, the beetles were very active and were observed to open their elytra and fly quite readily. The second site where I found *B.villosus* was on the Kingwater near Dovecote Bridge on 31st July. One specimen was swept from low, mixed herbage beneath large broom and gorse bushes on the western bank of the river (NY530646).

In Britain *B. villosus* feeds mainly on Broom and the whole life-cycle from egg to adult takes place within the seed pods. A very detailed account of the biology and ecology of it is provided by Parnell (1964). The females lay their eggs on the outside of the pods and after the larvae hatch they immediately start to bore into the pod where they then begin to feed on the seeds. After the larval period has been completed the larvae then pupate within the individual seeds. After a short period of time the adult beetle emerges and then eats its way out of the pod to escape. Usually only one larva develops within a single seed, this provides enough food for the whole development to take place.

Acknowledgements

The river shingle invertebrate survey was carried out on behalf of the Environment Agency and English Nature.

References

- Atty, D. (2004) The seed-beetle *Bruchidius villosus* F. (Coleoptera, Bruchidae) in Cumberland (VC70): *Carlisle Naturalist* **12(2)**:49.
- Parnell, J.R. (1966) Observations on the population fluctuations and life histories of the beetles, *Bruchidius ater* (Bruchidae) and *Apion fuscirostre* (Curculionidae) on Broom (*Sarothamnus scoparius*). *Journal of Animal Ecology* **35**:157-188.

John Read, 43 Holly Terrace, Hensingham, Whitehaven CA28 8RF

[The following reference was accidentally omitted from David Atty's Note in Vol. **12(2)**. Ed.:

- Cox, M.L. (2001) Notes on the natural history, distribution and identification of seed beetles (Bruchidae) of Britain and Ireland: *Coleopterist* **19**:113-147.]

The Birch Sawfly (*Cimbex femoratus* (Linn.)) in north Cumbria: recent and past records of an elusive insect

This extremely large sawfly (about the size of a big queen bumble-bee), though supposedly widely distributed, is very rarely reported. There were two records from 2004, both from 10km square NY55. The first of these was a male which I found at Moorthwaite Moss on 20th June; the second was in upper Geltsdale on 25th July (Timothy Ireland, Jeremy and Margaret Roberts). Both instances were of single individuals and both were noticed because they happened to be on the ground. To these I can add one retrospective record: in October 1996 at High

Stand (NY44), I found, and photographed, a very large (c. 40 mm) handsomely marked sawfly larva, which was apple green with a yellow-edged purple stripe down the centre of its back. This was wandering amongst leaf litter. From the key in Wright (1990), and comparison with published photographs, this was certainly a *Cimbex* and most probably *C. femoratus*. The larval food is birch foliage, and all three records were close to birch trees.

The adult Birch Sawfly is a very distinctive insect, with clear, dark-edged, bee-like wings, clubbed antennae and a very noticeable pale yellow 'gash' of soft tissue at the base of its abdomen, contrasting with the otherwise dark reddish colouration. (The function of the last feature is to enable the rather stiff body to be bent forwards under the legs). Larvae of most species within the same family (Cimbridae) spin cigar-shaped cocoons onto twigs of their food-plant, within which they pupate. It is possible to read in recent, and otherwise respectable, Field Guides that *C. femoratus* does this too. The High Stand observation and published information on the equivalent North American species (www.forestryimages.org) both support the view that the process takes place on the ground in litter (see also below).

At present there is no readily available literature enabling males or larvae of *Cimbex* to be identified to species. However, adults of *C. femoratus* are the most distinctive, and this remains the only one of the three species occurring in the UK to be recorded in Cumbria.

Cumbria records of *Cimbex* are few and far between. Miles (1976), in an account stated to cover '40 years of collecting and recording', lists only *femoratus* and mentions only two records: Carlisle, 1835 and Buttermere, 28 May 1929. There is no comment on status or behaviour, and the implication that he had not encountered this species himself is clear. The Tullie House entomological collections (not seen by Miles) contain six Cumbria specimens of *C. femoratus* adults: Scales Wood, Buttermere [NY11], 28 May 1930; Tarn Lodge [NY55], 28 May 1923; Burgh-by-Sands [NY35], 6 June 1982; Moorthwaite Moss (*i.e.* site of 2004 report), June 1971; Isel [NY13], August 1941; and Carlisle [NY35 or 45], 1900.

The species clearly persists in Cumbria, and why it is so infrequently seen is unclear. It may indeed be very uncommon, but if adults and larvae also tended to use higher canopy levels, they could be relatively invisible anyway. A Russian source (www.protect.forest.ru) specifically mentions that oviposition occurs in treetops (and also confirms the habit of pupation at ground level).

Wright (1990 and pers. comm. 2004) considers there has been a significant decline in the abundance of many larger cimbrids in the past half century. That there have been two instances in 2004 alone may be no more than a coincidence, but it could

also be that the species benefited from a good spring and a good preceding year – as may have been the case with unrelated insects, such as the Holly Blue butterfly (see vol. 12.2 of this journal).

With quite a large geographical spread of records to date, and much apparently suitable habitat in the county, it will be interesting to see how records develop in future.

References

- Miles, H. W. (1976) On the Sawflies of Cumbria. *Natural History in Cumbria: 1975-6*, pp. 46-68. [Association of Cumbria Natural History Societies.]
 Wright, A. (1990) *British Sawflies: a key to the adults of genera occurring in Britain*. Shrewsbury. Field Studies Council.

David Clarke, Burnfoot, Cumwhitton, Brampton, CA8 9EX

Survival of the Yellow Star-of-Bethlehem (*Gagea lutea*) through the Eden floods

Having been keeping an eye on – ‘surveying’ seems too formal a term – many of the colonies of the Yellow Star-of-Bethlehem (*Gagea lutea*) along the middle River Eden, this spring I was keen to see how they had fared in the unprecedented floods of 7th/8th January 2005. (Unhelpfully, I was away from home for the second half of March, and by early April, when I had the chance to check, there was already strong growth of vegetation around many of the patches, and many *Gagea* plants were over-flower, both making location difficult.)



In the time available, two main areas were checked: 1) the west bank of the Eden from the upper end of Wetheral Woods down to the weir below the railway viaduct (about 2.4 km); and 2) the west bank from Low House, north of Armathwaite, to below Hawkscliff Scar (1.4 km).

In 1), fifteen colonies known in 2003 and 2004 were searched for (on 4th/6th April 2005). The presence of plants was confirmed in all but one of these. The exception, at the upper end of Wetheral Woods NT property, was the only site where severe erosion had

stripped an estimated depth of 10 cm of gravel, and very few signs of any perennial plants remained. A few bulbs of Ramsons (*Allium ursinum*) were growing – perhaps having been deeply embedded enough to survive – but no *Gagea* was evident.

In 2), eleven colonies known in 2003/4 were searched for (on 8th April 2005). In no case was erosion evident, and indeed there was some sand deposition at many sites. Plants were found in eight out of the eleven sites; the failure to find the plant in the remaining three was clearly not due to erosion, since in all cases there was strong growth of vegetation, the plants being perhaps overlooked. Plants were found in three sites not located in 2003/4, but in all cases these were sites known from earlier years, and apparently overlooked, or not evident, in 2003/4.

Discussion and conclusions

Overall, and contrary to expectation, erosion of sites had been minimal, and indeed deposition had occurred in many places, rather than erosion. In all areas, other than the single eroded site described under 1), the vegetation cover had evidently survived the floods intact, and in fact there was often a deposition of a few centimetres of sand. Very many trees and shrubs had been toppled either by the gales or by the floods, and a number of colonies had narrowly escaped being covered by fallen logs or branches. Survival under such conditions would most likely be compromised, due to shading, accumulation of detritus, etc.

Whilst the numbers of flowering stems and density of patches of leaves appear to vary greatly from year to year, many colonies seem remarkably persistent. It may simply be that the familiar long-lived colonies are those chance establishments within sites which themselves happen to be long-lived due to protection by topographical features such as large tree-boles, etc.

The great majority of Cumbria's *Gagea* colonies – including the sites mentioned here – lie on somewhat unstable river-banks within a very few metres of normal river level. *Gagea* must compete poorly with other perennials. Although the early emergence and fading of its leaves, before most of the vegetation develops fully, allows a window of unfettered photosynthesis, there may still be root-competition below ground. It appears to be the case that frequent scouring of the bank during floods helps to remove some competition, perhaps inhibiting the plant succession which eventually out-competes the *Gagea*. Whilst I have never seen seed-set in *Gagea*, many plants produce masses of offset bulbs, which may act as effective down-river propagules after floods.

A very long-established colony in Wetheral Woods – known for at least twenty years – has in recent years lost vigour, as it has gradually become overgrown with

Bluebell (*Hyacinthoides non-scripta*), Dog's Mercury (*Mercurialis perennis*), Lords-and-Ladies (*Arum maculatum*), etc. This scenario is likely to be the ultimate demise of most *Gagea* colonies, rather than a catastrophic event such as bank erosion.

Jeremy Roberts, Eden Croft, 2 Wetheral Pasture, Carlisle CA4 8HU

A low altitude occurrence of the lichen *Parmelia discordans* (Nyl.) from the Eden valley, Cumbria

This small, neat-looking member of the lichen genus *Parmelia* is mainly associated with upland areas, where it occurs on well lit, acid rocks. It can be locally frequent in such areas in northern Britain, and may even be under-recorded owing to its resemblance to the larger, much commoner *P. omphalodes*. I have recently found *P. discordans* low down on the west face of a massive, detached, lightly-shaded block of the local Lazonby sandstone in the Eden gorge near Armathwaite (NY54), well within river flood levels, at an altitude of only some 60 metres a.s.l. Although well established on this single rock, I did not find the species elsewhere at the location. It was accompanied by the widespread *Parmelia saxatilis*.

The map in the very useful identification compact-disk (BLS, 1997) shows that most Cumbrian records for *P. discordans* are in the uplands – mainly the higher Pennines. In the UK, this species reproduces only by fragmentation of the thallus, not by spores or vegetative propagules – which could be carried aerially. Perhaps this occurrence may simply be yet another instance of the Eden re-distributing elements of the flora of its upper catchment into occasional suitable niches along its valley – as also occurs with flowering plant species, such as Northern Bedstraw (*Galium boreale*) and Bird's-foot Sedge (*Carex ornithopoda*).

I am grateful to Rod Corner for help in confirming the identification.

Reference

British Lichen Society. (1997) 'Identification of *Parmelia* Ach'. [CD]. London: BLS c/o The Natural History Museum.

David Clarke, Burnfoot, Cumwhitton, Brampton, Cumbria CA8 9EX

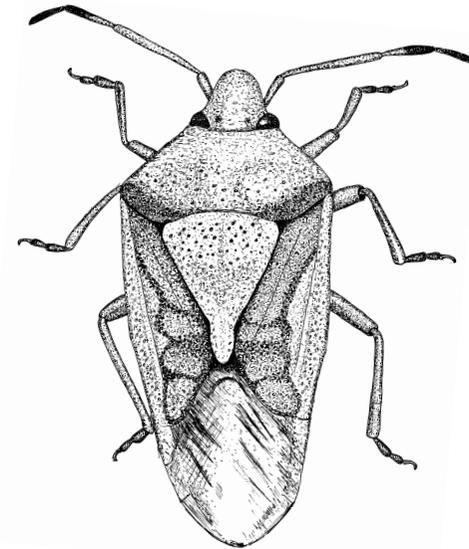
The occurrence of the Juniper Shieldbug *Cyphostethus tristriatus* (Fabr.) in south Cumbria

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This short paper has been written in the hope that it may stimulate interest in shield bugs in general and in the Juniper Shieldbug in particular. I first became interested in the latter species when I came across several specimens taken from native Juniper in the course of collecting berries for propagation during a Juniper Regeneration Day with English Nature near High Force in Upper Teesdale. I was encouraged to try to find the species in Cumbria by comments made by Harry Eales who suggested that it may well occur here, in Yorkshire, and even north of the Scottish Border.

Writing in 1959 in their classic work on the British Heteroptera, Southwood and Leston (1959) state that the insect 'is found in Juniper woods where these are of lowland or downland form. Thus the upland patches of Juniper in Yorkshire and the north do not usually support it....: the sole authentic capture in the north was made at Witherslack Wood, Lancs., in February 1935'.



Juniper Shieldbug (Stephen Hewitt)

Hawkins (2003) describes the Juniper (*Juniperus communis*) as 'in terminal decline' on the chalk downs of Surrey, whilst Halliday (1997) states that the existing populations within Cumbria are likely to disappear as a consequence of grazing and other factors. Some of the stands of Juniper in the Copper Mines Valley above Coniston are composed almost entirely of very old bushes, many of which have fallen over in the thin soil. Several of the bushes in the apparently healthy-looking stand on the southern part of Corney Fell suddenly turned brown and died this summer, for no apparent reason. Nowhere is there any sign of natural regeneration in any of the Juniper stands in Cumbria that I have visited. Faced with such a decline in the fortunes of its host plant, the future of any insect dependent upon Juniper would appear to be far from secure.

However, soon after the publication of 'Southwood & Leston', the Juniper Shieldbug was found to be feeding on Lawson's Cypress (*Cupressus lawsonii*) in suburban gardens, occurring on just about every bush examined. Later it made use of other exotic cypress trees. The most northerly record for the insect on Lawson's Cypress that I have seen was an occurrence in the Lancaster area reported by Jennifer Newton.

Despite this national success story for the Juniper Shieldbug, there are only three known Cumbrian sites on the Biological Records database at Tullie House Museum, Carlisle. Two of these are in the south of the county (Witherslack SD48, 1935; Arnside Knott SD4474, 1985, Steve Judd) and one in the north. (Mosedale NY3432, 1992, Mike & Betty Clementson). The latter record was published with the observation that 'this insect is reported to be spreading north but the isolated nature of the site suggests that the population is of long standing and has been overlooked in the past' (Hewitt, 1993).

So far, I have visited stands of native Juniper in nine different locations and have found the Juniper Shieldbug in all but one, often in quite large numbers. Once I had discovered an example of the bug, I often stopped searching for others. My experience bears out that of other writers in that the insects generally occur only on berry-bearing bushes and in branches exposed to the sunlight but that they are likely to be found on each of the forms of the Juniper. So far, I have only beaten a single adult from a non berry-bearing bush.

My own records to date are: High Force, Teesdale NY884285, 11th Oct 2003 – several; Thwaite Fell SD175895, 5th Nov 2003 – 8; Tilberthwaite Gill NY300007, 5th Dec 2003 – 3; Torver Back Common SD295934, 5th Oct 2004 – 2; Blawith Common SD283915, 8th Oct 2004 – 4; Burton Fell SD552780, 14th Oct 2004 – 1; Arnside Knott SD455776, 15th Nov 2004 – 1; Whitbarrow SD450850, 26th Nov

2004 – very common (over 50); Whitbarrow SD440840, 26th Nov 2004 – several; Whitbarrow SD449851, 26th Nov 2004 – common (20+); Copper Mines Valley, Coniston SD286985, 4th Dec 2004 – 3; Copper Mines Valley, Coniston SD287981, 4th Dec 2004 – 1.

These records beg the question as to whether the Juniper Shieldbug has recolonised stands of native Juniper from exotic species or whether, as Harry Eales suggests, 'it could be an indigenous species in northern England and, possibly has been present undetected in these counties for centuries' – escaping detection thanks to the lack of interest in Hemiptera and the inaccessibility of many of the stands of Juniper.

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[Having previously believed that Juniper Shieldbugs hibernated as adults in the ground vegetation and moss I had been deterred from searching for them in winter in such a non-specific habitat. However, following a tip from Jim that the bugs frequently hibernate in the foliage of berry-laden Juniper bushes, I tried beating some juniper in Birk Wood NY4018 on the shore of Ullswater in December 2004 and was quickly rewarded by knocking out several adult Juniper Shieldbugs. Most were on bushes with lots of berries, but one was found on a non-fruiting bush.

Stephen Hewitt]

Memoirs of a Carlisle naturalist: part 1

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As a native of Carlisle now in his 93rd year, the writer of this article is not well known to Carlisle naturalists, although he joined Carlisle Natural History Society in 1931 and served on the Council during 1932/33 and is now a honorary Life Member. This is due to the fact that most of my working life (including six years in war service) has been spent away from the city. I have vivid memories of the Society's meetings during those early years when they were held in the curator's room at the back of Tullie House which has a large window overlooking Abbey Street. I was then a junior member who now has lively memories of people such as Ernest Blezard, Ritson Graham, F.H. Day, The Reverend H.D. Ford of Thursby, G. B. Routledge, Ben and Tom Johnston. Lady members included Mrs E. Blezard and her mother Mrs Stewart who were well known botanists.

There were no lectures illustrated by colour slides or films as is the case today. Meetings rarely exceeded 20 members, who sat round a large table where specimens could be exhibited. Each evening was usually limited to discussions on a pre-selected topic such as birds, botany, beetles or butterflies and moths, while less well known subjects were rare events. A short period was always devoted to new or recent natural history records and occasionally there would be an evening when junior members could talk about their interests and ask for information or advice. In other words, membership participation was possibly more frequent than it is today. It was my ambition to become involved in one of the less well known branches of natural history which offered opportunities to make new discoveries, although I had no idea how to begin.

In 1930 my parents moved from their house in Botcherby to a larger home already a hundred years old, at Devonshire Terrace on Stanwix Bank – on the line of the *vallum* of Hadrian's Wall. I had just left Grammar School and was without employment. My father provided paint and brushes and I was given the task of repainting the outside of the greenhouse which stood in the walled garden. There were very few plants in that greenhouse, but the window frames and internal staging was a home to a considerable variety of spiders, which aroused my interest. I started to keep a notebook to record records and observations even though I had no way of knowing their names.

One day as I sat on a low wall in the garden to eat my lunch, I observed a very tiny black spider racing about over the stonework without any apparent sense of direction. This tiny thing was captured in a glass topped pill box. I thought that surely it must have a name and I took it to Tullie House hoping to find out something about it. Whilst Ernest Blezard admitted he had no knowledge about spiders he was helpful. Not only did he tell me about a paper on Cumberland Spiders which had been published in the *Transactions* of this Society by Harry Britten in 1912 (the year of my birth), but he produced Britten's collection of spiders preserved in spirit and donated to the museum. From the Natural

History Society library he found a book by a Miss E. Stavely which described and illustrated British Spiders. Realising the use of a microscope was essential, he even arranged for the museum to lend a microscope to me. Just when I was beginning to think I had an answer to all of my queries the snags began to appear.

Miss Stavely's book, which is still in the Natural History Society library, has sixteen plates with full colour illustrations from which one can recognise some of the British species. It was published in 1866 and was already 50 years out of date because all the nomenclature had changed. Most of the specimens in Britten's collection did not relate to the book. The microscope lent to me was a petrological instrument designed for use by geologists and useless to me, when what I needed was a high-powered binocular microscope with intensive top lighting – quite beyond my means. It was quite obvious that the identification of my little black spider was beyond my ability. But all was not lost. I was able to relate some of the larger species I observed in the greenhouse to those in Britten's collection and, although I was then unaware of it, some of the observations I recorded then had never previously published by anyone. These include the remarkable mating behaviour of the spider *Linyphia montana* (Clerck) which can last for up to 7 hours; that spiders cannot eat solid food, which has first to be made fluid externally by the injection of digestive enzymes – which in fact are also solvents for spider's silk. The spider severs the silk thread, not by biting it, but by a touch of digestive enzyme. Spiders do not have jaws capable of biting a silk thread. When a spider destroys a damaged web to create a new one it rolls up and eats the old silk. Spiders are one of the few groups of animals which can make use of the force of gravity to create snares to capture their prey.

My interest was sustained by watching spiders, even though I could not put names to so many of them. I found that species which did not occur in that Stanwix garden could be plentifully found on Kingmoor Nature Reserve to the north west of Carlisle – one of the earliest nature reserves in Britain, being founded in 1913. Having achieved so much, it was all terminated when my first employment took me to Manchester, where I did not find much natural history, but did at least come into contact with Harry Britten, who was then entomologist at Manchester University Museum. At that time Britten was working on the *Anoplura* and *Mallophaga*, which are sucking lice and feather lice, the host-specific parasites of mammals and birds. Being aware of a collection at Tullie House of these mounted as micro-slides, I was able to arrange for this to be lent to Britten. After that we became good friends. He gave me an introduction to Dr Randell Jackson, who was a medical doctor with a practice in Chester and an authority on spiders. This was in 1939 and Britain was soon to be at war with Germany: six years in the marine branch of the RAF (Coastal Command in Home waters), and overseas in South East Asia Command, temporarily put paid to my burgeoning interest in spiders.

[Part 2 of John Parker's account will follow in a future issue. Ed.]

Mammals in Cumbria: examples of what publicly collected records can tell us about the distribution and ecology of our local species

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Introduction

Biological records, including mammal data, play an important part in understanding and detecting changes in our local environment. Data on species distributions assist in setting conservation priorities, help assess the impacts of human activities or the spread of introduced alien species (Battersby & Greenwood 2004, Harris & Yalden 2004). A UK mammal monitoring network is currently being set up to provide a co-ordinated programme for the collection of surveillance and monitoring data (Battersby & Greenwood 2004). Whilst initial reports indicate a need for a co-ordinated approach with regard to mammal monitoring, there is a wealth of information in publicly recorded sightings that can assist this process. Here we present an analysis of mammal sightings collated by Tullie House Museum from a 210 year period (1793-2003), with the bulk of the data collected over the last 20 years (Figure 1). We provide an overall summary, discuss favourites, data on road kills, changes in abundance and range and give an indication of the types of habitats in which mammals have been observed in Cumbria.

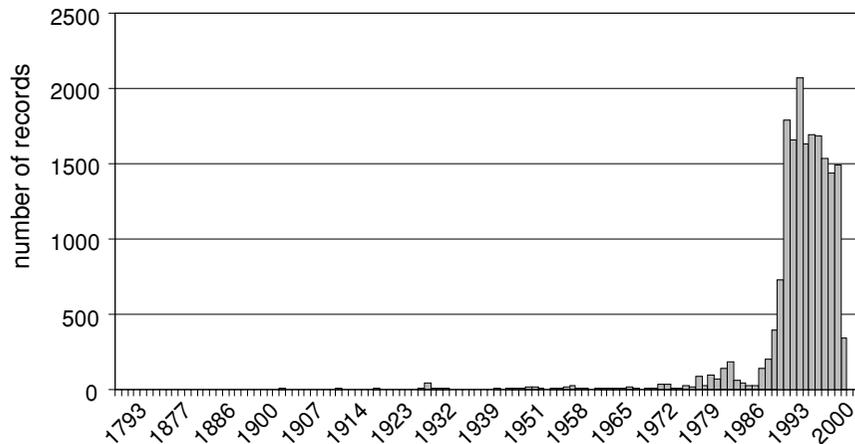
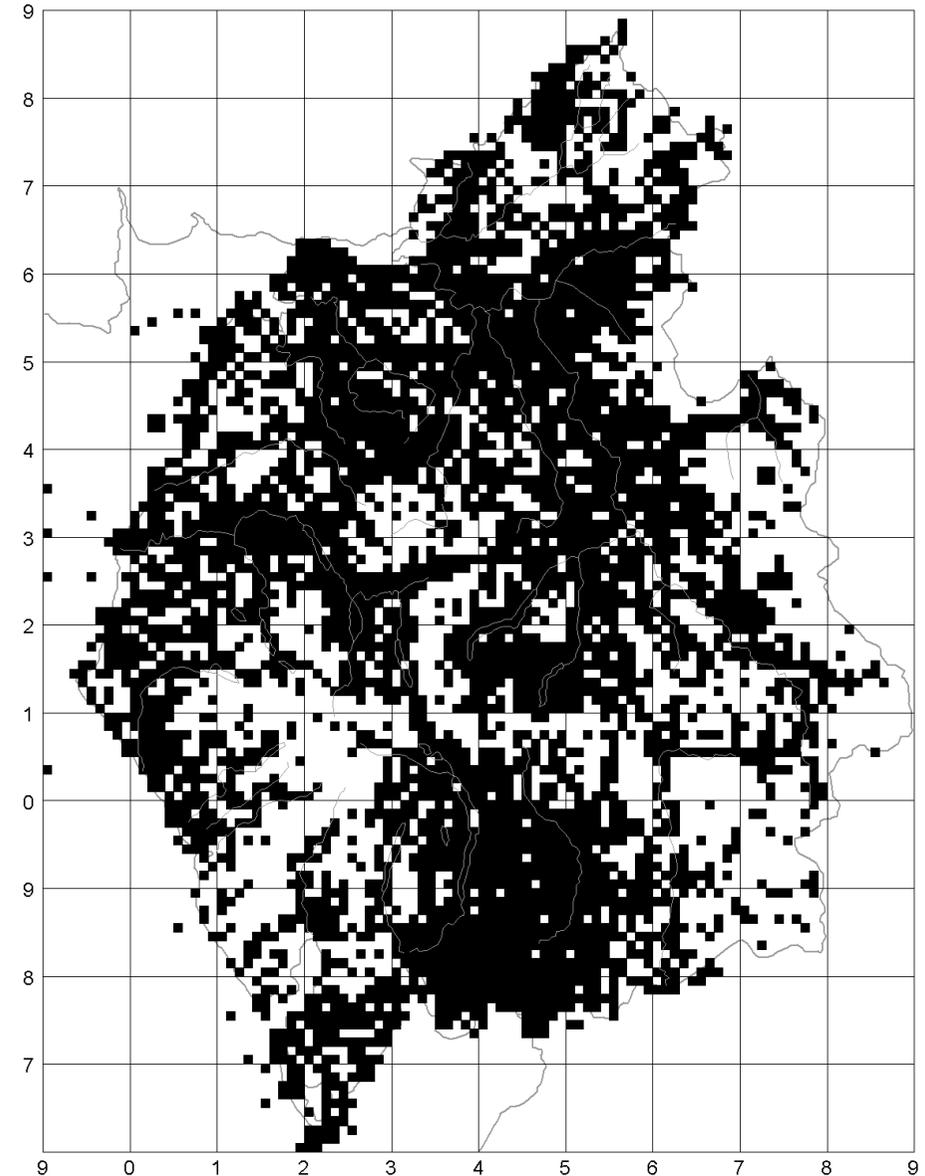


Figure 1. Number of records over time

Figure 2. Distribution of all mammal records on the Tullie House database (including cetaceans and seals)



Nature of the mammal records received

A closer examination of the types of records (Table 1, below) by Order provides an overview. Field and road records represent a high proportion of the data submitted. It also indicates that recorded information is not always clear without explanation of the standards and definitions of terms used in data collation.

Table 1. Breakdown of mammal records by Order and record type

Order	Alive	Auditory	Cat	Dead	Field Sign	Killed	Nest	Road Kill	Trapped	Unknown
Artiodactyla	1472	9		15	85	2		37		117
Carnivora	1522	25	3	53	992	28	334	1307	21	211
Chiroptera	490	81	11	158	26	4	565	7		144
Insectivora	406	10	34	110	1582	5	112	675	29	221
Lagomorpha	1914		8	21	51	5	90	288	1	43
Rodentia	3571	2	63	123	280	24	54	373	40	230

Recording bias for different species

Table 2 (opposite) shows the number of records for each species on the database and its percentage of the total number of mammal records. Estimates of the English population of each species (Harris *et al.* 1995) are given together with the percentage of the total English mammal population.

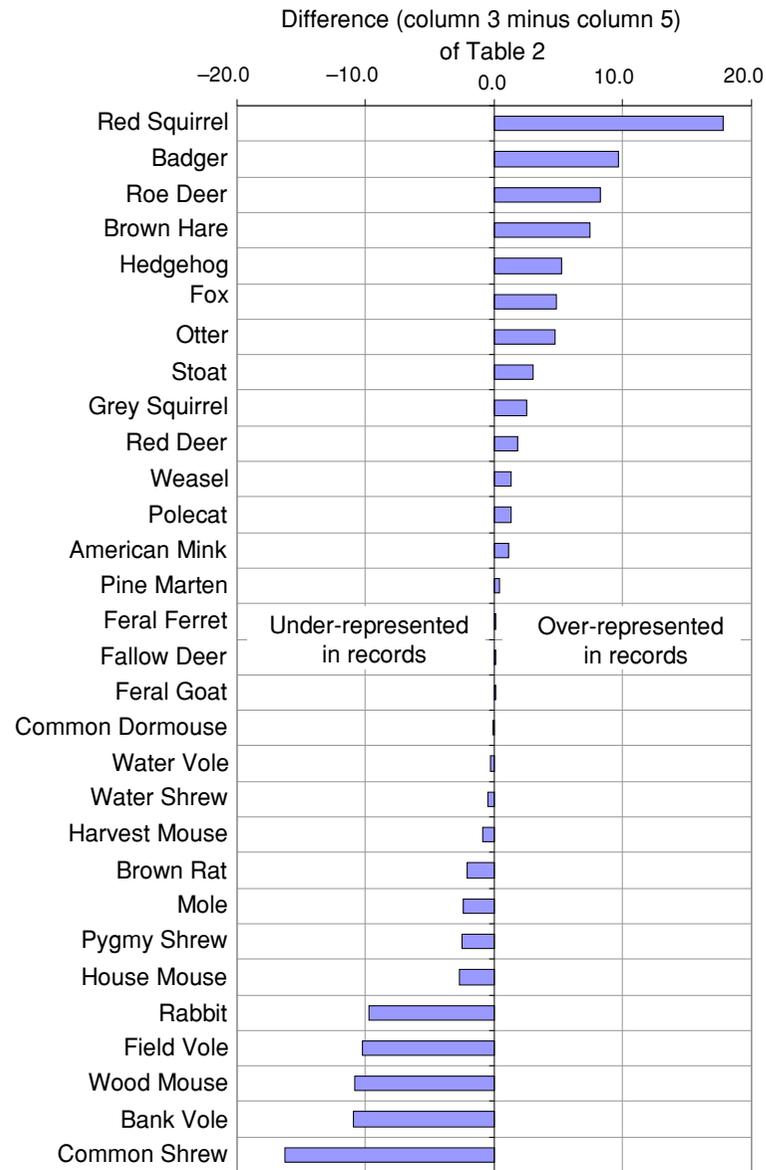
If we compare the proportion of records for individual species with the proportion based on the total population estimate of each species in England (Table 2), then the results indicate that some species may be preferentially reported (Figure 3, page 22). Obvious, charismatic or topical species like the Badger and Red Squirrel are over represented when the proportion of records is compared to the relative abundance of the species in England (Harris *et al.* 1995). Some species (*e.g.* Red Squirrel, Otter, Roe Deer and Brown Hare) may actually be commoner in Cumbria than the national average, although recording bias for these species will also be a factor.

Many of the rodents and shrews, as well as Mole and Rabbit, are under-represented. The *most* under-represented species are all small, unobtrusive species, without very obvious field signs such as molehills, and which are difficult to identify to species from a brief glimpse in the field. The exception is the Rabbit, which may simply be just too common and obvious for people to bother reporting.

Table 2. Breakdown of records by species with estimated total English population estimates (Harris *et al.* 1995)

Species	Number of records	Records (%)	Population Estimate	Population (%)
Red Squirrel	2949	17.8	30000	0.0
Badger	1625	9.8	195000	0.1
Roe Deer	1386	8.4	150000	0.1
Brown Hare	1303	7.9	572250	0.4
Hedgehog	995	6.0	1100000	0.7
Fox	828	5.0	195000	0.1
Otter	778	4.7	350	0.0
Stoat	533	3.2	245000	0.2
Grey Squirrel	631	3.8	2000000	1.3
Red Deer	309	1.9	12500	0.0
Weasel	245	1.5	308000	0.2
Polecat	210	1.3	2500	0.0
American Mink	187	1.1	46750	0.0
Pine Marten	60	0.4	100	0.0
Feral Ferret	13	0.1	200	0.0
Fallow Deer	23	0.1	95000	0.1
Feral Goat	10	0.1	315	0.0
Common Dormouse	31	0.2	465000	0.3
Water Vole	40	0.2	752000	0.5
Water Shrew	50	0.3	1200000	0.8
Harvest Mouse	10	0.1	1415000	1.0
Brown Rat	231	1.4	5240000	3.5
Mole	1809	10.9	19750000	13.3
Pygmy Shrew	116	0.7	4800000	3.2
House Mouse	54	0.3	4535000	3.1
Rabbit	1114	6.7	24500000	16.5
Field Vole	257	1.6	17500000	11.8
Wood Mouse	376	2.3	19500000	13.1
Bank Vole	169	1.0	17750000	12.0
Common Shrew	214	1.3	26000000	17.5

Figure 3. Observed bias in the recording of individual species



Road kills

Many records are also related to road kills. Road kills have been suggested as a possible way to monitor mammal population changes.

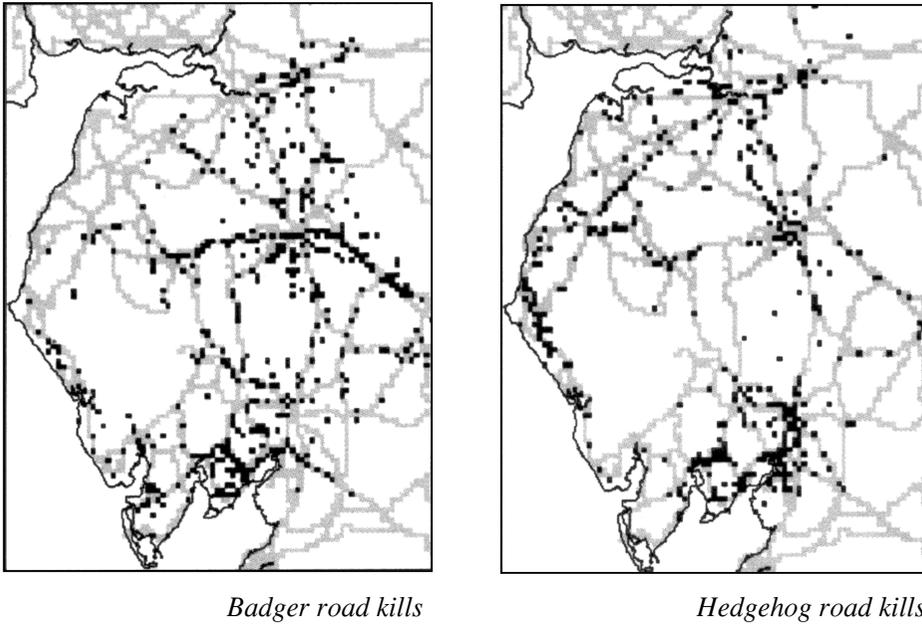
A study by Baker *et al.* (2004) suggested that it may be suitable to monitor Fox populations and perhaps other species, but that further investigation into the precision of this approach is needed. With regard to Cumbrian records, Badgers and Hedgehogs clearly top the list (Table 3, below). Mustelids are very well represented in the records and this may reflect a behavioural trait that makes them more prone to be killed on roads or alternatively it could be recorder bias. 82 Brown Rats are also recorded.

Table 3. Summary of 'road kill' records in order of abundance (all species with more than 10 records)

Mammal species	Number of records
Badger	888
Hedgehog	644
Rabbit	181
Polecat/Polecat Ferret	159
Grey squirrel	145
Red squirrel	127
Fox	116
Brown hare	107
Brown rat	82
Stoat	72
Otter	36
Roe deer	35
American mink	18
Weasel	16
Mole	14
Common Shrew	13

Plotting the distribution of road kills can provide interesting results. For example Badger road kill data (collated for the county by Jean Scott) indicate that the A590 from the M6 towards Barrow, as well as the A66 from Appleby through Penrith to Keswick, are particularly dangerous for Badgers (Figure 4, below).

Figure 4. 'A' and 'B' roads in Cumbria (grey) with road kill records (black) at 1 km scale



Analysing the frequency of road kills at particular locations can indicate particular black spots, where action might be taken to alleviate a problem.

The behavioural traits and seasonal activity of different species result in them being particularly vulnerable to road traffic accidents at differing times of year. Badger road kills peak in February and March, when mating and territorial behaviour is at its peak and animals may move between setts. Red Squirrels are most frequently killed in autumn when they are feeding on fallen tree seeds on the ground and along roadside verges (Figure 6, page 26).

Figure 5. Distribution and coincidence of road kills of Badger (upper) and Red Squirrel (lower) on Cumbria's roads

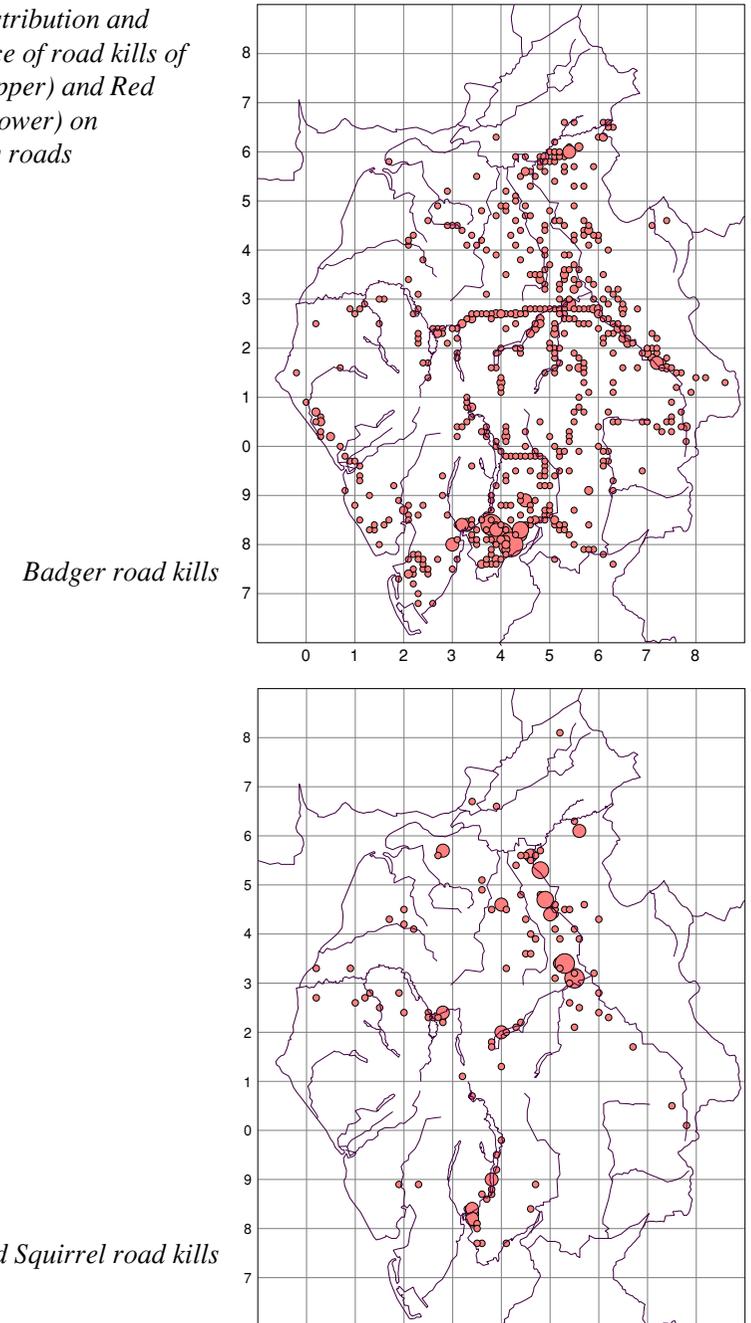
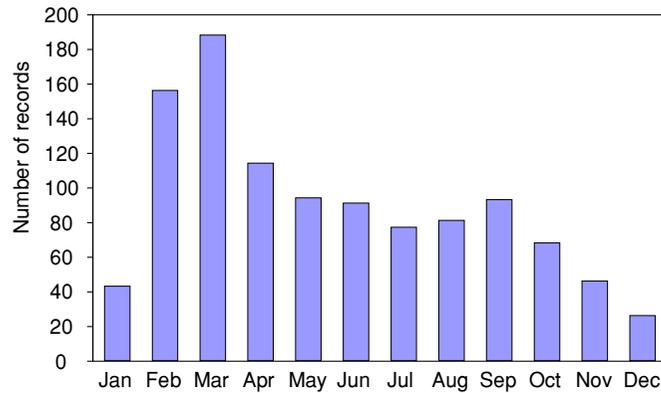
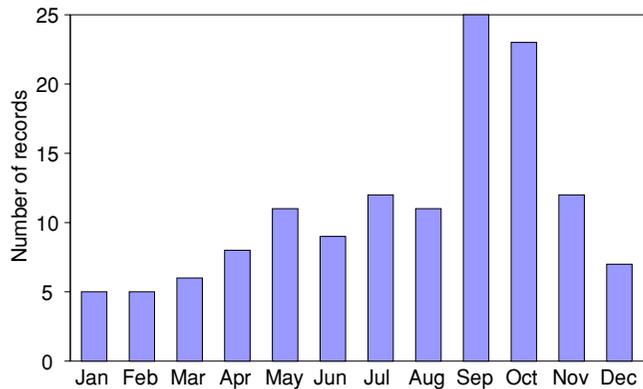


Figure 6. Periodicity of road kills of a) Badger and b) Red Squirrel on Cumbria's roads



a) Badger road kills by month



b) Red Squirrel road kills by month

Monitoring population change

Analysis of squirrel records over time clearly illustrates the dramatic decline of the Red Squirrel in Cumbria, particularly in the south of the county (Figure 7, opposite). The scale of this decline is almost certainly under-represented in the number of records as generally the rarer a species becomes, the more assiduous people are in reporting sightings. The peak of Red Squirrel records coincides with the launch of

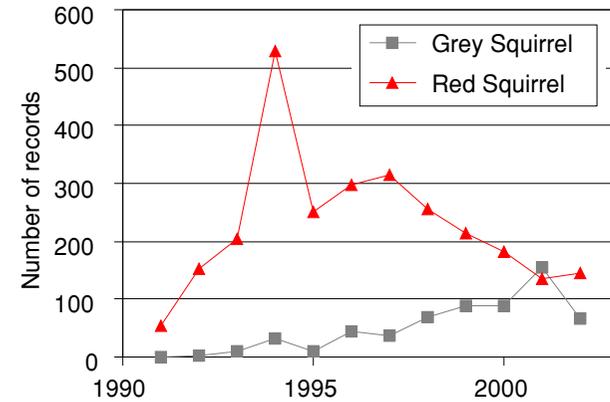


Figure 7. Frequency of Red and Grey Squirrel records in Cumbria (1991-2003) illustrating the observed decline of Red as Grey Squirrel expanded

the Red Alert North West initiative in Cumbria, raising awareness when the species was still relatively widespread in the county.

Red squirrels are replaced by the introduced grey squirrel through a number of mechanisms and Wauters *et al.* (2004) give a detailed overview. Greys do not aggressively drive out the native Red nor do they interfere with Red Squirrel matings. The interactions are more subtle. Studies in the north of England and Italy have shown that fewer Red Squirrel females have a second litter in the summer when Grey Squirrels are present and juvenile recruitment is significantly reduced. In other words, as resident adult Red Squirrels get older and die, they are not replaced. The speed of replacement is modified by landscape composition and structure. Red Squirrels disappear fastest in deciduous woodlands, the original habitat of the North American Grey Squirrel. However, there can also be catastrophic Red Squirrel declines through disease. Squirrel pox virus (formerly known as parapoxvirus) can kill Reds within a matter of two weeks. Greys are known to be able to carry the disease and appear to be unaffected. There have been several outbreaks of the disease in Cumbria.

The detailed records of squirrels, coupled with analysis of specimens in the collections of Tullie House Museum and the Hancock Museum, have also proved invaluable in a number of morphological and genetic studies by Newcastle University (Hale *et al.* 2001; Hale & Lurz 2003). This indicates that Cumbrian squirrels possess unique genetic and morphological traits that are not found elsewhere in Europe.

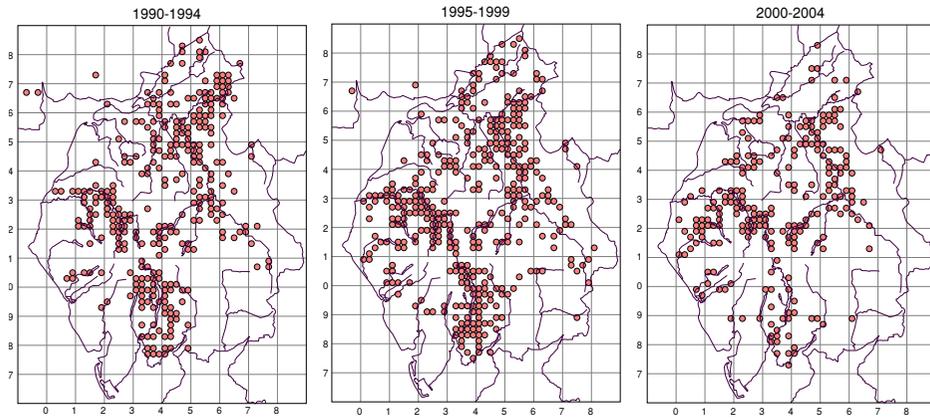


Figure 8. Decline in distribution of the Red Squirrel in Cumbria over the last 15 years

Mapping of species distributions and comparison across different date classes can show changes in distribution over time. For example the contracting range of the Red Squirrel in Cumbria over the last 15 years (Figure 8, above) can be compared with the corresponding expansion in the range of the Grey Squirrel in the county (Figure 9, below) over the same period.

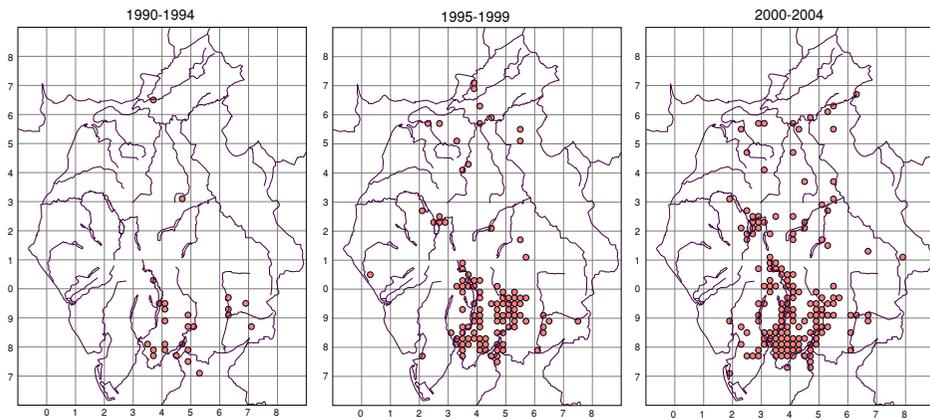


Figure 9. Expansion of the Grey Squirrel in Cumbria over the last 15 years

Similarly, patterns of expansion and colonisation (recolonisation) can also be mapped for Polecat (Figure 10, below) and Otter (Figure 11, page 30).

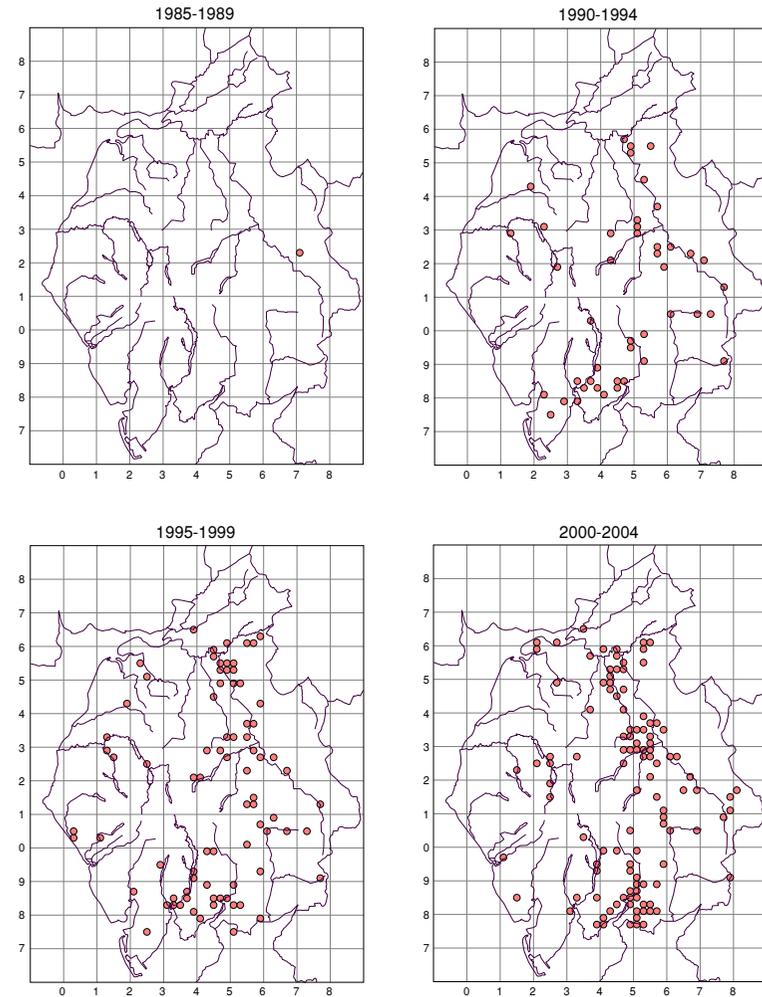


Figure 10. Expansion in range of the Polecat in Cumbria since its release near Sunbiggin (NY60) and south Windermere (SD38) in the 1980s.

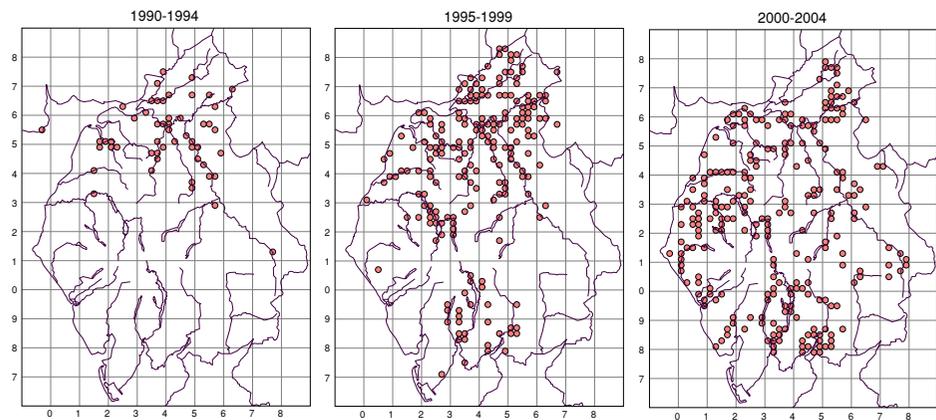


Figure 11. Recovery in range of the Otter in Cumbria aided by recolonisation from Scotland around 15 years ago

Habitat associations

A habitat analysis for some of the better recorded species (Table 4, below) comparing the percentage of fixes in key habitats with overall availability in Cumbria, suggests that heath and conifer habitats are underused and that species show relative preferences for managed grassland and deciduous woodlands. However, these data will be influenced by observer bias as species are less likely to be seen in *e.g.* dense conifer forests. Data indicate that Brown Hare and Hedgehog use managed grasslands to a greater degree than would be expected on simple habitat availability and the same is true for Roe Deer and deciduous woodland.

	Hare	Fox	Badger	Roe deer	Hedgehog	% area in Cumbria
Heath & moor	12	18.2	12.8	15.1	12.8	28.4
Tilled	9	9.6	9.6	9.9	10.4	8.4
Deciduous woodland	4.5	7.6	8.6	10.9	6.4	3.4
Managed grassland	69.9	55.4	59.5	53.1	64.3	46.7
Conifer woodland	1.1	4.6	1.6	7.2	1.5	8.6

Table 4. Percentage of records in different habitats compared to the availability of the habitat in Cumbria (based on GIS habitat data at 1 km scale)

Collation and use of the data

Mammal records collected and collated by Tullie House Museum already play an important role in informing and assisting with conservation work in Cumbria. Records submitted to the Museum are entered onto the software package ‘Recorder’, a biological recording database. Here all the relevant information on mammal records are stored (what, when, where, seen by whom) along with any attributes specific to the record such as information on sex or stage, abundance data, whether it was a field record or dead.

From this point mammal records are disseminated to a wider audience via publications such as *Birds and Wildlife in Cumbria* and other publications. Records are also provided to special interest groups both within Cumbria and nationally where the data is used for the better understanding of distribution and conservation effort.

Tullie House Museum also receives enquiries for biological records from consultants and other agencies for purposes of environmental assessment such as for developments in the county. Species records thus provided ensure that conservation issues are taken into account particularly when relating to protected or rare species.

Mammal records are also disseminated through the Cumbria Biological Data Network (CBDN) of which Tullie House Museum is a partner. Other partners are Cumbria County Council, Cumbria Wildlife Trust, English Nature, Environment Agency, and Lake District National Park Authority. The aims of CBDN are to exchange and share biological data and information to enable more effective nature conservation and education to be achieved to co-ordinate research activity and to stimulate species recording. Several of these partner organisations also collect mammal data for specific projects and species such as the squirrel and Water Vole projects operated through Cumbria Wildlife Trust and Otter surveys conducted by the Environment Agency. Cumbria Wildlife Trust also operates a special interest group covering mammals, and other independent groups collect records of bats and Badgers etc. Mammal records collated at Tullie House therefore feed into a wider pool of biological information in the county and can be used by CBDN partners in their conservation work.

Acknowledgements

This article and the work of the Tullie House Museum biological records database and CBDN would not be possible without the continuing supply of information freely given by very many individual naturalists, groups and organisations over several decades. The individual naturalists are too numerous to name individually

but member organisations of Cumbria Naturalists' Union and Cumbria Biological Data Network, as well as the Cumberland and Westmorland Bat Groups, deserve special mention for the large amounts of mammal data they have contributed to the database.

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The *Carlisle Naturalist* publishes material on all aspects of the natural history of Cumbria. General articles, results of personal research, news items, records and letters of relevance to Cumbrian naturalists are welcomed. Material accepted for publication must not be submitted in a similar form to any other journal.

Material should be clearly legible – ideally type-written double-spaced on one side of white A4 paper, or submitted on DOS-formatted 3.5 inch computer disc in ASCII or RTF format and accompanied by a paper copy. Only species and genera should be underlined. Authority names should be given in full. Illustrations should be in black ink; they must be originals and not photocopies. Whilst every care will be taken of original artwork, the editor can not be held responsible for any loss or damage. References should be given in full at the end of the article or note.

Authors of papers two or more pages in length will be provided with 10 reprints. Papers may be submitted to a referee.

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Field Meetings and Workshops 2005

Field meetings start from Carlisle College, Victoria Place, Carlisle. (Leaders may cancel meetings at this rendezvous if they consider circumstances unsuitable.) Members' own transport; places available for those without. Bring packed lunches for all meetings beginning before midday. (All dates are Saturdays.)

April 23rd: Borrowdale - upland birds Leader: Geoff Horne. Depart 9:30 am, meet 10:30 am Great Wood carpark.

May 14th: Watchtree Reserve, Great Orton Leaders: Brett Carson & Frank Mawby. Depart 9:30 am, meet 10 am at Watchtree carpark (NY334539).

June 4th: Colvend, Dalbeattie - Dragonflies Leader: David Clarke. Depart 9:30 am.

June 18th: Maryport – plants and butterflies Leader: Geoff Naylor. Depart 9:30 am, meet 10:30 am at Maryport. Meet car park by Netherhall School, NY044369.

July 2nd: Grasses Workshop Leader: Jeremy Roberts. 10 am Tullie House; local field visit in afternoon. Lunch not provided. Numbers limited: please book via Tullie House Box Office, 01228 534664. Free to CNHS members.

July 30th Moth Night at Wreay Leaders: Richard Little & Mike Clementson. Depart 8:30 pm, meet at Sam's Wood, Wreay (NY439487) 9 pm. For those wanting to examine the overnight catch, again at 8 am on 31st July.

Aug 27th: Shieldbugs Workshop Leader: Steve Hewitt. 10 am Tullie House; local field visit in afternoon. Lunch not provided. Numbers limited: please book via Tullie House Box Office, 01228 534664. Free to CNHS members.