

# CLEVELAND NATURALISTS'

## FIELD CLUB



## RECORD OF PROCEEDINGS

Volume 6 Part 2

Spring 1996

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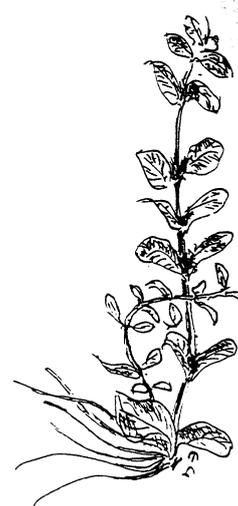
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The following members will be pleased to assist in the identification of specimens.

### **Flowering Plants**

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### **Fungi and Coleoptera**

Alex Weir

### **Bryophytes**

John Blackburn

### **Birds**

Maurice Hallam

### **Lepidoptera**

Neville Harwood (and General Entomology)  
Malcolm Birtle (and Geology), Eric Gendle

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## Membership Details

Any person interested in joining the Cleveland Naturalists Field Club should send their subscription to the Membership Secretary. **Potential members are welcome to our field meetings listed at the back of this issue.**

Annual subscriptions are due on the 1st January each year.

(Adult £5.00. Students under 18 yrs. £1.00)

Members are entitled to attend meetings of:

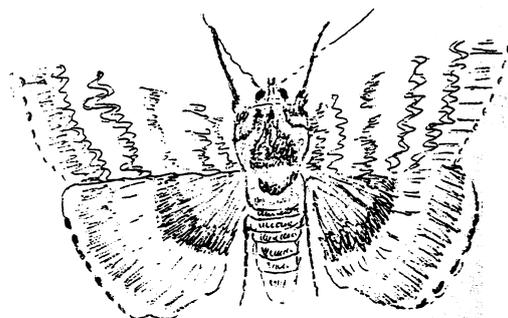
Yorkshire Naturalists' Union

Northern Naturalists' Union

Cleveland Wildlife Trust

The Ramblers' Association.

The Club is affiliated to these organizations.



## **Editorial**

This is the sixth issue of the new Proceedings. The site chosen for special study this year was Cliff Rigg, near Gt. Ayton. Again it should be stated that these site-specific articles are not intended as exhaustive site surveys, but reflect the member's interests and records over the past year. The site chosen for the next Proceedings is Marton West Beck and Sandy Flatts. Any records for this site will be gratefully accepted for inclusion.

## **Acknowledgements to Contributors**

Many thanks to all the contributors that include Christopher Lowe (News), Tony Wardhaugh (Molluscs), Alex Weir (Fungi), Malcolm Birtle (Moths), Richard Pepper (Geology), Ian Lawrence (Botany), Darroll Frier (Botany and Guisborough Walkway), Maurice Hallam (Birds), Vince Jones (Botany), John Blackburn (Bryophytes), Eric Gendle (Drawings). So many people contribute to botanical records that they are referred to in this publication as the 'Botanical Team' - the team consists primarily of Ian Lawrence, Vince Jones, Darroll Fryer, Pat Wood, Norman Thompson, John Blackburn, Pam Law, and Chris Lowe.

## **News**

### **2nd November Heslop-Harrison Memorial Lecture, 'Red Squirrels', Peter Lurz, Walkington House**

#### **Demise of Cleveland County- by Malcolm Birtle**

Cleveland County in its formal sense will disappear in 1996, after a very short history, in favour of unitary authorities based on the the major centres of population i.e Stockton, Middlesbrough, Redcar and Hartlepool. In natural history terms 'Cleveland' has meant, and will remain, the Northern area of vice-county 62 (part of North Yorkshire) and the Southern area of vice-county 66 (Durham). Again the wisdom of using vice-counties, instead of ephemeral government administrative/political districts has been demonstrated. The name of the Club will continue to reflect our members interest in an area we all know, but which remains beyond the definition of our political masters.

#### **Great Scott -- Great Snipe- by Christopher Lowe**

During field - work on Coatham Common this summer -- two major projects, so I was on site frequently -- the spectacle of a snipe (*Gallinago gallinago*) rising from almost underfoot was a daily occurrence. On one occasion, I disturbed a brooding bird from a clutch of three eggs.

On 27th August, however, something different happened. The 'snipe' got up heavily on seemingly broader - based wings, and flew fairly low and very straight, unlike the usual towering, zig-zag trajectory. Moreover, this bird showed quite conspicuous white outer tail-feathers, and grunted several times, instead of uttering sporadic 'schaaf' - like notes.

To all intents and purposes, this seemed typical of great snipe (*Gallinago media*), a very irregular visitor to Britain. I had scarcely any real doubt that I had

stumbled on a rare bird; only conventional caution prevented my 'ticking off' this as a certain sighting.

Martin Blick, CWT's 'consultant' on bird-matters, searched the same area hours later, following my 'phone - call, and saw the bird three times. He agreed that it was not common snipe. But, no more did it match his experience of great snipe. Despite its being larger than common snipe, this individual was not bulky enough for the larger species. Other features did not conform, either.

So, what is the answer? We do not know. The episode must remain a frustration as well as a mystery. The lesson available, however, is a salutary reminder that one should not be dogmatically certain about the hitherto unfamiliar. Nature can play tricks; 'there are more things in Heaven and Earth than are dreamt of ....'

### **Some Interesting Botanical Records from Waupley Moor- by Christopher Lowe**

Some time ago [LAW94], Ian Lawrence wrote about an outstanding patch of vegetation near the ASDA store in Stockton, which contained several locally rare species. This year (1995), a similar event has occurred, albeit in a very different setting- relatively remote moorland along the B 1366 in Langbaugh, rather than urban waste-ground. Here, in open, grazed habitat, Vince Jones examined a small boggy area where he found considerable quantities of marshwort (*Apium inundatum*), a tiny umbellifer previously unrecorded in Cleveland. Chris Lowe also investigated this site, discovering a few plants of water purslane (*Lythrum portula*), again a species hitherto unknown in the County.

How has this happened? Were these species overlooked, or are genuinely recent arrivals? If the latter is true, are they a significant addition to our flora, or merely accidental, and possibly short-lived?

During his first visit, Vince also located three other specialities, cheek-by-jowl with the marshwort. These were: narrow buckler - fern (*Dryopteris carthusiana*); white sedge (*Carex curta*); and floating club -rush (*Eleogiton fluitans*). Whilst all three are typically plants of an acid environment, they are but sparingly represented in Cleveland, in sites such as Eston Moor. Moreover, the marshy surrounds to this newly - discovered gem contain a high - quality supporting cast, including good populations of bog pimpernel (*Anagallis tenella*) and marsh cinquefoil (*Potentilla palustris*). The site is now thoroughly documented, with a sketch - map showing the main distributional features, but the question remains : how to 'categorize' this patch of vegetation. Like Ian's ASDA site, this is not strictly eligible for the 'Single Species Site Register', because of its multiplicity of noteworthy plants. The moorland in general has previously, and probably rightly, been designated as a 'Site of Nature Conservation Importance', so this relatively minute wetland scarcely stands separately and in its own right.

Nature is not entirely co-operative; however, the ecologist tries to classify, for human convenience or conservation purposes, some exceptions to a scheme are inevitable. We must perhaps be content, therefore, that this site is now fully documented, and that the 1995 observations are available, as a special survey filed under Waupley and Liverton Moors SNCI, for future reference in, for example, compiling the

County's Red Data Book of vascular plants, or monitoring our richer botanical localities.

[LAW94] Lawrence I. Unusual Wild Plants on a Thornaby Wasteland, *Proceedings of the Cleveland Naturalists' Field Club*, 5, 4, 1994, p.6

### **A Rare Immigrant Moth in County Cleveland- by Christopher Lowe**

Not many European moths measure eight-and-a-half centimetres across the wings! This, though, was the dimension recorded for a striking creature found in his garage at Marske by Ken Bibby, Cleveland Wildlife Trust's Information Officer. The next day, September 6th, the moth was unfortunately dead, and brought to CWT Offices for identification. This process took a matter of seconds. The moth's size and distinctive colouring tallied with illustrations of Clifden Nonpareil (*Catocala fraxini*). At the time, this specimen was only the third instance this year of this very irregular migrant in Britain. Others may of course have been reported since.

The occurrence of rarities is seldom totally fluky or inexplicable. Late summer 1995 brought other Continental species such as Camberwell Beauty (*Nymphalis antiopa*) and yellow-winged darter (*Sympetrum flaveolum*). A pattern presumably links these records, of high summer temperatures prompting insect migrants to move, and light airs allowing their survival of a lengthy sea - crossing.

### **Pine Marten in the North Yorks Moors- by Christopher Lowe**

This report, strictly speaking, does not concern Cleveland County. It is, however, an exciting local event. A motorist driving over Carlton Bank has claimed a sighting of a marten (*Martes martes*). Expert scrutiny of his evidence (by, for example, zoologist Johnny Birks) has given considerable credence to the report. Another pine marten was trapped not far from this area a few years ago [JEF94]. So, possibly a small and elusive population of this rare mammal persists in our local countryside. It is scarcely something to be expected during our occasional forays to the North Yorkshire Moors, but it is worth knowing that the species exists in our neighbourhood. Further particulars of pine martens' habitat, appearance and behaviour are available in brochures kindly sent to me by Dr. Birks. Ask Chris Lowe if you would like one.

[JEF94] Jeffries D.J., Critchley C.H., 'A New Pine Marten (*Martes martes*) Record for the North Yorkshire Moors: Skull Dimensions and Confirmation of Species', *Naturalist*, 119, 1011, 1994

### **A Local Tree Survey- by Ian Lawrence**

I am at present engaged in studying and recording the tree species growing in our area with my botanical research group based at the Botanic Centre at Acklam. These include introduced species such as are found at Stewart Park, Preston Park and Poole Hospital grounds at Nunthorpe. Many of our northern non-native species have been widely planted in the region such as Horse Chestnut, Walnut, Hornbeam, Norway Maple and several of these are fully mature specimens. There are also street plantings of trees such as

Whitebeam species, Elms, Limes, Cherries (including Bird Cherry) and other 'blossom' trees and Alder species. Other open spaces such as cemeteries and small parks have interesting trees. One of the particular species I am giving special attention to are the many Poplar species such as the hybrid Black Poplars. I would like to map the occurrence of these throughout the old county Cleveland area and would therefore be interested in localities of any tree you may consider as being unusual. I would appreciate fully-grown leaf specimens where there is any uncertainty to accompany the record. But please no exotic garden shrubs. Fully grown garden trees (other than orchard species!) are OK. Good tree hunting in 1996!

### **Highlights of the 1995 Field Meetings**

#### **Saturday 22nd April, Brignall Banks, led by Eric Gendle.**

The woodlands by the River Greta were rich in spring flowers. The most interesting included: Moschatel (*Adoxa moschatellina*), Alternate-leaved Golden-saxifrage (*Chrysosplenium alternifolium*), Woodruff (*Galium odoratum*), Toothwort (*Lathraea squamaria*) and Wood Stitchwort (*Stellaria nemorum*). Ferns were also abundant. We particularly noted: Wall-rue (*Asplenium ruta-muraria*), Polypody (*Polypodium vulgare*) and Hard Shield-fern (*Polystichum aculeatum*). Pied Flycatcher was also noted in the woods.

#### **Sunday 14th May, Upper Teesdale, led by Neil Baker.**

Bowlees quarry was visited first. Hairy Rock-cress (*Arabis hirsuta*) was coming into flower and Lesser Clubmoss (*Selaginella selaginoides*) was found on the quarry floor. However, the main walk of the day was by the River Tees from Wynch Bridge to High Force; several of the Upper Teesdale species were seen in flower. These included: Mountain Everlasting (*Antennaria dioica*), Tea-leaved Willow (*Salix phylicifolia*), Globeflower (*Trollius europaeus*) and Mountain Pansy (*Viola lutea*). A fine stand of Shady Horsetail (*Equisetum palustre*) was seen by the river and pleasing patches of young Oak Fern (*Gymnocarpium dryopteris*) nestled at the base of the Juniper bushes near High Force.

The following birds were noted: Sparrowhawk, Black-headed Gull, Jackdaw, Carrion Crow, Rook, Lapwing (with young), Goldfinch, Greenfinch, Chaffinch, Blackcap, Willow Warbler, Goldcrest, Dunnock, Robin, Blue Tit, Coal Tit, Meadow Pipit, Tree Pipit, Skylark, Redstart, Wren, Song Thrush, Grey Wagtail, Common Sandpiper, Dipper, Mallard (with young), Swift, Swallow, House Martin, House Sparrow, Starling (with young), Stock Dove, Pheasant.

#### **Wednesday 17th May, Bousdale, led by Kath Dilworth.**

Lesser Water-parsnip (*Berula erecta*) was found by the pond on the old Guisborough railway. Neighbouring woodland yielded: Himalayan Honeysuckle (*Leycesteria formosa*), Hairy Woodrush (*Luzula pilosa*), Three-nerved Sandwort (*Moerhingia trinerva*) and Wood Meadow-grass (*Poa nemoralis*).

The following birds were noted: Crow, Jackdaw, Canada Geese, Mallard, Coot, Water Hen, Blackbird, Song Thrush, Swift, Swallow, Goldfinch, Chaffinch, Linnet, Whitethroat, Blackcap, Willow Warbler, Garden Warbler, Chiff-chaff, Blue Tit, Great Tit, Wren, Dunnock, Wood Pigeon

**Saturday 20th May, Riccaldale, led by Pam Law.**

The edge of forestry tracks yielded abundant Chickweed Wintergreen (*Trientalis europaea*) in fine flower. During the day several edges were studied; the most interesting finds were Dioecious sedge (*Carex dioica*) and Few-flowered Spike-rush (*Eleocharis quinqueflora*) in wet flushes also Greater Tussock-sedge (*Carex paniculata*) in a woodland marsh.

The following birds were noted: Mistle Thrush, Song Thrush, Blackbird, Bullfinch (2), Blackcap, Garden Warbler, Chiff-chaff, Willow Warbler, Goldfinch, Dunnock, Coal Tit, Blue Tit, Marsh Tit, Greater Spotted Woodpecker, Lapwing, Crow, Collard Dove, Pheasant.

**Wednesday 24th May, Bonny Grove Farm, led by Ian Lawrence.**

Ian Lawrence led a meeting-with-a-difference, in that, with Shirley Muir, Middlesbrough District Council's 'Becks Officer', was present too, the walk-and-talk hinged upon likely or preferred developments to this important area of semi-natural habitats. It is a complex scenario: County Council ownership, extant farming tenancies, rapid suburban encroachment here on the town's Southern outskirts, an arguable 'Corridor' function for wildlife, possible Community Forest involvements, access for the public, site-management, ..... so many potentially conflicting ideas and aspirations! A pity, then, that only ten CNFC (or Nature Conservation Forum representatives) turned up; are they not interested in what happens to their own back-yard? The very threatening weather may have deterred attendance; we did in fact get quite wet. The natural history inevitably took second place but the visit sufficed to prove how good these upper reaches of Marton West Beck are. In particular, a patch of relict, untended, gorse-enclosed grassland caught the eye. It contained a significant population of pepper saxifrage (*Silaum silaus*). Elsewhere, the mix of open space, rough ground and linear woodland provided interesting surroundings and stimulated discussion.

**Wednesday 7th May, Saltburn Cliffs, led by Pam Law.**

Grasses, in good flower at this time of the year, were examined critically. These included the glaucous-leaved Red Fescue (*Festuca rubra ssp. juncea*), Early Hair-grass (*Aira praecox*), Downy Oat-grass (*Helictotrichon pubescens*), Crested Hair-grass (*Koeleria macrantha*) and Yellow Oat-grass (*Trisetum flavescens*).

### **Sunday 11th June, Gundale, led by Ian Lawrence.**

Our walk took us through grassland and woodland rich in lime-loving plants. Orchid species were particularly evident. Fly Orchid (*Ophrys insectifera*) and both butterfly orchids *Platanthera chlorantha* and *P. bifolia* were particularly pleasing. Three hawkweed microspecies were seen during the day; these were *Hieracium acuminatum*, *H. grandidens* and *H. vulgatum*. Other specialities found were: Lily-of-the-valley (*Convallaria majalis*), Ploughman's-spikenard (*Inula conyza*), Common Gromwell (*Lithospermum officinale*), Thread-leaved Water-crowfoot (*Ranunculus trichophyllus*) and in fine flower, Stone Bramble (*Rubus saxatilis*).

### **Saturday 17th June, Richmond Area, led by Colin Chatto.**

A small group of members walked upstream on the south side of the River Swale from the former Richmond station on a warm sunny day. The walk was mainly through woodland with sycamore, beech and ash being the principal trees present but there was one magnificent Hornbeam (*Carpinus betulus*) laden with the winged fruits. A large number of plant species was observed, those of greatest interest being: Shining Crane's-bill (*Geranium lucidum*), Wood Crane's-bill (*Geranium sylvaticum*), Intermediate Avens (*Geum intermedium*), Wood Stitchwort (*Stellaria nemorum*) and Mountain currant (*Ribes alpinum*).

After crossing the road and the river we walked back to Richmond in more open country along paths beneath Whitcliffe Scar and observed further plant species among them: Limestone Bedstraw (*Galium sternerii*), Early Forget-me-not (*Myosotis ramosissima*), Fan-leaved Water-crowfoot (*Ranunculus circinatus*), Northern Dock (*Rumex longifolius*) and Field Madder (*Sherardia arvensis*). Birds that we noted during the walk were Chaffinch, Goosander, Long-tailed Tit, Wheatear, and Wren.

### **Wednesday 21st June, North Gare, led by Ian Lawrence.**

This walk was a repeat of the corresponding one in June 1994. We were very pleased, however, to rediscover an old record for the rare sand-dune grass Rushed-leaved Fescue (*Festuca arenaria*), known by us previously as *F. juncifolia*.

The following birds were noted: Herring Gull, Ringed Plover, Lapwing, Swift, Grey Partridge, Skylark, Meadow Pipit, Swift, Reed Bunting.

### **Wednesday 28th June, Thornaby Marshalling Yards, led by Chris Lowe.**

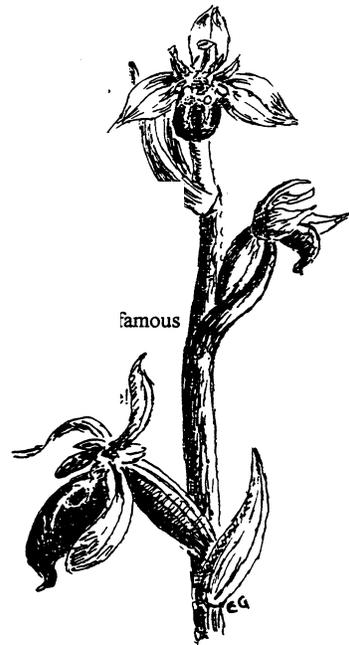
Seventeen CNFC members found their way (with varying degrees of difficulty!) to this urban surrounded site at the old Thornaby Marshalling Yards, for a meeting organised in conjunction with Cleveland Wildlife Trust. Don Vine, CWT's Community Wildlife Officer, briefly explained the site's past and complex history and also its present importance as a focus of habitat-creation done by the 'Greenfingers' work-force and other voluntary groups.

Now, soil-topped land-restoration supports a quite extensive and diverse flora. Such relatively rare grass-species as Meadow Barley (*Hordeum secalinum*) and

Rat's-tail Fescue (*Vulpia myuros*) caught the eye at the outset. Further on, the famous Thornaby Marshalling Yards cynosure, the Bee Orchid (*Ophrys apifera*), was thoroughly admired in a generally rich and colourful sward. This, remember, is Cleveland's largest population of Bee Orchids, in the heart of industrial Teesside!

Such features as artificial pools and bat-boxes add diversity to the site, increasing the educational interest and potential and testifying to the efforts and inventiveness of the workforces responsible. Sadly, the water was at a very low level, though plants like Water-plantain (*Alisma plantago-aquatica*) survive and the invasive alien Cockayne (*Crassula helmsii*) was also present.

Common Blue (*Polyommatus icarus*), Large Skipper (*Ochlodes venata*), Small Skipper (*Thymelicus sylvestris*), Meadow Brown (*Maniola jurtina*), Small Heath (*Coenonympha pamphilus*) butterflies, and moths, such as Yellowshell (*Campogramma bilineata*), and Shaded Broad Bar (*Scotopteryx chenopodiata*) were amongst the entomological sightings. Kestrel, Grey partridge, Swift and Meadow pipit were also seen.



### **Saturday 1st July, Buckden Area, led by Norma Pagdin and Joan Bradbury.**

This was another excellent walk in Yorkshire limestone country. We were able, during the course of the day, to study plants growing in short limestone-grassland, on limestone rocks and in calcareous flushes. Highlights included: Northern Marsh-orchid (*Dactylorhiza purpurella*) and its hybrid with Common Spotted-orchid (*D. fuschii*), Common Butterwort (*Pinguicula vulgaris*), Bird's-eye Primrose (*Primula farinosa*) and many sedges, of which Brown Sedge (*Carex disticha*) was perhaps the most noteworthy. Plants in the limestone-grassland included: Fragrant Orchid (*Gymnadenia conopsea*) and Greater Butterfly-orchid (*Platanthera chlorantha*). We were able to compare the two bedstraws Limestone Bedstraw (*Galium sternerii*) on limestone rocks and Heath Bedstraw (*G. saxatile*) on neighbouring acidic heath. Several hawkweeds were seen; particularly interesting were *Hieracium rubiginosum* and *H. oistophyllum* but the botanical highlight of the day was a fine colony of the very rare *H. pseudostestroemii*. The hawkweed identifications have been confirmed by D.J.McCosh.

### **Wednesday 5th July, Eston Hills, led by Darroll Fryer.**

On a rather damp and dull evening a dozen members walked around Eston Moor. Our first stop was at Moordale Bog where we observed the location of Marsh Cinquefoil (*Potentilla palustris*) and also observed the many plants of the hybrid between the broad and narrow leaved buckler-fern *Dryopteris x deweveri*. Narrow Buckler-fern (*Dryopteris carthusiana*) has a single representative in the same area. During our walk to the Nab we

passed the site of Bog Asphodel (*Narthecium ossifragum*); a few plants were still in flower. A Large Emerald (*Geometra papilionaria*) was noted. A hare was also crossing one of the adjacent fields.

The following birds were noted: Green Woodpecker, Robin, Dunnock, Whitethroat, Willow Warbler, Blackcap, Meadow Pipit, Chaffinch, Goldfinch, Swift.

### **Sunday 9th July. Port Mulgrave, led by Malcolm Birtle**

This meeting took place on a hot sunny day and members expected a good list of butterflies from the slopes above the old harbour. The numbers in fact were disappointingly small. The reason for this was probably provided by a local man walking his small family who informed members that the flanking agricultural fields were heavily and repeatedly sprayed with agro-chemicals. Nevertheless the following lepidoptera were noted Tortoiseshell (*Aglais urticae*), Meadow Brown (*Maniola jurtina*), Common Blue (*Polyommatus icarus*), Silver Ground Carpet (*Xanthorhoe montanata*), Latticed Heath (*Semiothisa clathrata*), Yellowshell (*Camptogramma bilineata*), Shaded Broad-bar (*Scotopteryx chenopodiata*). The most notable moth was the Blackneck (*Lygephila pastinum*) found amongst scrubby grassland half-way down to the old harbour. This has been described as “very local in VC62” and may be the most northerly record on the Yorkshire coast. The small Soldier beetle *Malthinus flaviolus* was also seen, with the Banded snail *Capaea hortensis*. It has not been reported at all in county Durham.

Botanical records for this outing can be found below.

The following birds were noted: Herring Gull, Fulmar, Curlew, Kestrel, Swift, Swallow, House Martin, Chaffinch, Goldfinch, Greenfinch, Linnet, Meadow Pipit, Blue Tit, Common Whitethroat, Lesser Whitethroat, Willow Warbler.

### **Wednesday 12th July, The Rookery, Yarm, led by Rob Scaife.**

Two areas in close proximity were studied, a small area of grassland and the adjacent riverside woodland. The former had Hoary Ragwort (*Senecio erucifolius*) and even more interestingly Pale Sedge (*Carex pallescens*), only the second Cleveland record. The wood contains some fine trees of Hornbeam (*Carpinus betulus*) and the grasses Bearded Couch (*Elymus caninum*) and Wood Poa (*Poa nemoralis*). Giant Campanula (*Campanula latifolia*) was in good flower. The following butterflies and moths were noted Small Skipper (*Thymelicus sylvestris*), Meadow Brown (*Maniola jurtina*), Large Yellow Underwing (*Noctua pronuba*), Heart and Dart (*Agrostis exclamatoris*), Shaded Broad-bar (*Scotopteryx chenopodiata*), and Cream Wave (*Scopula floslactata*). Many of the trees had the lichen *Parmelia sulcata* on them.

### **Sunday 16th July, Sutton Bank and Lake Gormire, led by Eric Gendle.**

On a fine, sunny day the walk took us from Sutton Bank along the Cleveland Way and down to Lake Gormire. En route we saw Rock Rose (*Helianthemum nummularium*), Agrimony (*Agrimonia eupatoria*), and Bloody Cranesbill (*Geranium sanguineum*). Around the lake we found Gypsywort (*Lycopus europaeus*), Marsh cinquefoil (*Potentilla palustris*), Water Mint (*Mentha aquatica*), Water Horsetail (*Equisetum fluviatile*), Water-

plantain (*Alisma plantago-aquatica*), Lesser Spearwort (*Ranunculus flammula*), Greater Bird's-foot Trefoil (*Lotus pedunculatus*), Ragged Robin (*Lychnis flos-cuculi*), Bulrush (*Typha latifolia*), Marsh Willowherb (*Epilobium palustre*) and Water Forget-me-not (*Myosotis scorpiodes*). Coots and Great Crested Grebe were seen on the lake and in the surrounding woods there were hundreds of very small frogs.

**Saturday 29th July, Bilsdale, led by Maurice Ward.**

A fine stand of Dotted Loosestrife (*Lysimachia punctata*) was seen amongst bracken by the track into Urra, a considerable distance from the nearest habitation. It was particularly pleasing to contrast the water crowfoots, Round-leaved Crowfoot (*Ranunculus omiophyllus*) and Ivy-leaved crowfoot (*R. hederaceus*). The following butterflies were seen Red Admiral, Small Tortoiseshell, and Large White.

The following birds were noted: House Martin, Swallow, Chaffinch, Goldfinch, Wren, Robin, Heron, House Sparrow,

**Saturday 12th August, Egton Area, led by Darroll Fryer.**

A moorland walk in August can provide an opportunity to enjoy an area covered by Heather (*Caluna vulgaris*) in flower along with clumps of Bell Heather (*Erica cinerea*) and Cross-leaved Heath (*Erica tetralix*) also on the moor Bristle Club-rush (*Isolepis setacea*) was noted in a ditch and there were fine stands of Round-leaved Sundew (*Drosera rotundifolia*). New Zealand Willowherb (*Epilobium brunescens*) was admired by the river at Egton. Perhaps the most interesting find was a suberect bramble (*Rubus scissus*), growing by the moorland roadside. A Wall Brown and a dead *Aeshna cyanae* (dragonfly) were also seen.

The following birds were noted: House Martin, Willow Warbler, Blackcap, Goldfinch, Wren, Greenfinch, Robin, Red Grouse, Meadow Pipit, Pied Wagtail

**Saturday 23rd September, Goathland Woods, led by Vincent Jones.**

The wood is rich in pteridophytes. Particularly special were the many plants of the hybrid between the broad and narrow leaved buckler-ferns, *Dryopteris x deweveri*, a hybrid growing here without, as far as we know, the parent Narrow Buckler-fern (*D. carthusiana*). Close by, at the foot of a rock-face, Hay-scented Buckler-fern (*Dryopteris aemula*) was admired. Many ferns were seen and studied, in particular, the morphophytes of Scaly Male-fern (*D. affinis*) There were fine plants of *D. affinis*, morphophyte *affinis*, in the wood close to the Goathland road. They exhibited well the tall, very glossy fronds with thick rachis and dense scales. Rough Horsetail (*Equisetum hyemale*) was also seen. It was interesting during the course of the day to compare the characters of the sub-order *Sabauda* hawkweeds *Hieracium vagum* and *H. sabaudum*. The dragonfly *Aeshna cyanae* twice perched on the back of Norma Pagdin while the party were taking lunch by the river. The Common Green Shield Bug (*Palomena prasina*) was also noted.

The following birds were noted: Pheasant, Kestrel, Robin, Dunnock, Wren, Grey Wagtail,.

### **Saturday 30th September, Hardwick Hall, led by Ian Lawrence.**

A fine day with the autumn colours just beginning provided a good opportunity to study a wide variety of trees, both native and introduced. In some areas trees had been planted in groups from the same genus, which was useful for comparison. Some of the more unusual trees identified and confirmed on a later date by some members, included: Oriental Sweet gum (*Liquidambar orientalis*), Butternut (*Juglans cinerea*), Smooth-leaved Elm (*Ulmus carpinifolia*), Keaki (*Zelkova serrata*), Fastigate Hornbeam (*Carpinus betulus 'fastigiata'*), Raouli (*Nothofagus nervosa*), Wild Service-tree (*Sorbus terminalis*), Bastard Service-tree (*Sorbus x thuringiaca*), Manna Ash (*Fraxinus ornus*), Wayfaring tree (*Viburnum lantanum*), Martini's Maple (*Acer martinii*), Paper Bark Maple (*Acer griseum*), Tulip tree (*Liriodendron tulipifera*) and Chinese Fossil tree (*Metasequoia glyptostroboides*).

A Red Darter (*Sympetrum striolatum*) (dragonfly) was seen.  
The following birds were noted: Mallard, Coot, Waterhen, Swallow, House Martin, Blackbird, Song Thrush, Greenfinch, Great Tit, Blue Tit, Wood Pigeon, Wren, Robin.

### **Sunday 29th October, Castle Hill S.S.S.I., led by Norman Thompson.**

As an experiment, it was decided to have a walk late in the season. It proved a good decision as 15 members were treated to a glorious sunny day. Starting from Ashberry, they took a circular route to Griff Lodge, then across Castle Hill and back by the forest track. The object of the walk, apart from viewing the autumn colours, was to see the unique example of relict woodland on Castle Hill. The ancient examples of stag-headed oaks, both sessile and pedunculate and small leaved lime were viewed. Two clumps of poplars were later named as *Populus x canadensis ssp.robusta*. Near the end of the walk a large patch of Small or Annual Nettle (*Urtica urens*) was discovered.

The following birds were noted: Jackdaw, Rook, Crow, Jay, Heron, Pheasant, Dipper, Robin, Wren, Dunnock, Chaffinch, Bullfinch, Marsh Tit, Coal Tit, Goldcrest, Blue Tit, Pied Wagtail, Mallard, Waterhen.

### **Observations on Invertebrates in Riccaldale-by Tony Wardaugh**

On the field meeting which took place on the 20th May 1995 the following were recorded.

#### **Terrestrial Molluscs**

A brief search in a disused roadside quarry near Cow House Bank (SE613 887) yielded four common species

<i>Cochlicopa lubrica</i>	Slippery Snail
<i>Discus rotundatus</i>	Rounded Snail
<i>Aegopinella pura</i>	Glass Snail
<i>Clausilia bidentata</i>	Door Snail

Species recorded in the mixed woodland of the Riccaldale area (SE62/86; 62/87; 62/88) included:

<i>Carychium tridentatum</i>	Herald Snail	<i>Leiostyla anglica</i>	English Chrysalis Snail
<i>Arion ater</i>	Black Slug	<i>A. distinctus</i>	Garden Slug
<i>Vitrea crystallina</i>	Crystal Snail	<i>V. contracta</i>	Lesser Crystal Snail
<i>Aegopinella nitidula</i>	Smooth Snail	<i>Limax marginatus</i>	Tree Slug
<i>Cochlodina laminata</i>	Plaited Door Snail	<i>Cepaea nemoralis</i>	Brown-lipped Banded Snail

Of the above, *C.laminata* and especially *L.anglica* are of interest. Both are characteristic of old woodland, *L.anglica* being a nationally scarce and declining species. *C.laminata* was located amid a derelict drystone wall beside the footpath rising through the wood, East of Hasty Bank Farm (approx. SE627 883). *L.anglica* was found in a damp wooded area by the Riccal at approximately SE622 873.

The most significant area for terrestrial molluscs located during the day was undoubtedly a calcareous flush close to Hasty Bank Farm (SE626 884). Here the sedges *Carex panicea*, *C. demisa*, *C. dioica* and *C. disticha* occurred, together with the moss *Cratoneuron commutatum* (My thanks to Mr. J. Blackburn and Mr. V Jones for identification of these). The following molluscs were found at this site.

<i>Lymnaea truncatula</i>	Dwarf Pond Snail	<i>Carychium minimum</i>	Herald Snail
<i>Vertigo antivertigo</i>	Marsh Whorl Snail	<i>V. pygmaea</i>	Whorl Snail
<i>Leiostyla.anglica</i>	English Chrysalis Snail	<i>Arion circumscriptus</i>	Bourguignat's Slug
<i>Vitrina pellucida</i>	Pellucid Snail (shell only)	<i>Vitrea crystallina</i>	Crystal Snail
<i>Nesovitrea hammonis</i>	Rayed Snail	<i>Aegopinella pura</i>	Glass Snail
<i>Limax maximus</i>	Great Slug	<i>Deroceras. laeve</i>	Marsh Slug
<i>Euconulus alderi</i>	Marsh Tawny Snail		

*L. anglica* was abundant at this site, the other two snails of particular interest being *V. pygmaea* and *V. antivertigo*. Both of these diminutive species are scarce and the latter, which is declining nationally, is characteristic of old wetland. Elsewhere in North Yorkshire both species occur at Ellerburn Nature Reserve in Dalby Forest (SE 85/84) and *V. antivertigo* is found at Hagg Wood Marsh (SE 83/89). The snails *C.minimum* and *E. alderi* and the slug *D. laeve* are more common wetland species while *L.truncatula* is a somewhat amphibious freshwater snail rather than a terrestrial one.

The following arthropods were also noted

#### Millipedes

*Philoscia muscorum*

#### Woodlice

*Glomeris marginata*

*Oniscus asellus*  
*Trichoniscus pusillus*

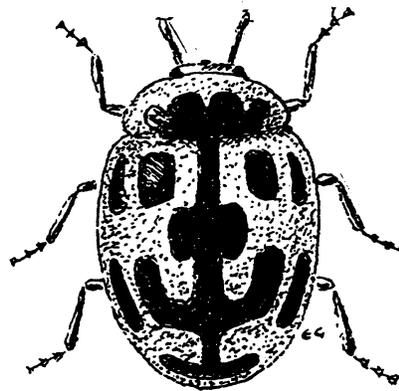
*Tachypodoiulus niger*  
*Cylindroiulus punctatus*

**Ladybirds**

*Coccinella 7-punctata* Seven Spot  
 Ladybird  
*Propylea 14-punctata* Fourteen Spot  
 Ladybird

**Bumblebees**

*Bombus terrestris*  
 (queen)  
*Bombus leucorum*  
 (queen)  
*Bombus pascuorum*  
 (queen)



**The Flora of Port Mulgrave- by the Botanical Team**

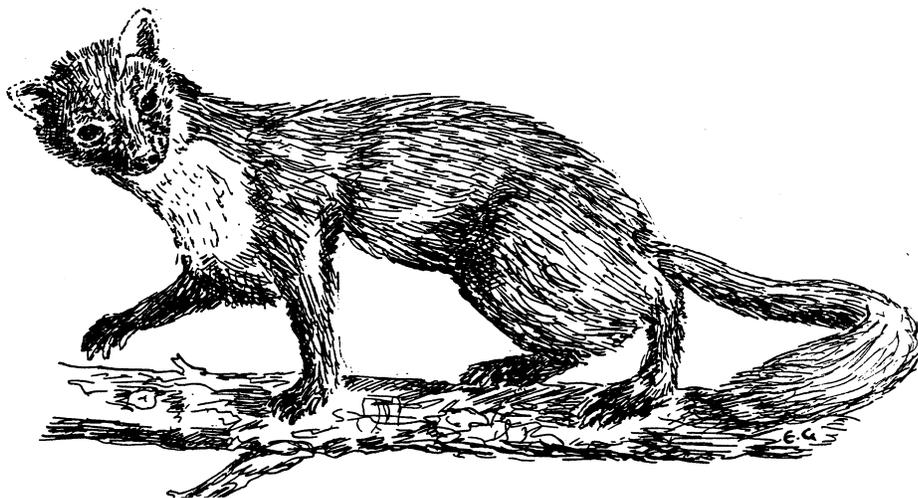
<i>Achillea millefolium</i>	Yarrow	<i>Elytrigia repens</i>	Common Couch
<i>Agrostis capillaris</i>	Common Bent	<i>Epilobium hirsutum</i>	Great Willowherb
<i>Agrostis stolonifera</i>	Creeping Bent	<i>Equisetum arvense</i>	Field Horsetail
<i>Aira praecox</i>	Early Hair-grass	<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Alopecurus geniculatus</i>	Marsh Foxtail	<i>Festuca arundinacea</i>	Tall Fescue
<i>Alopecurus pratensis</i>	Meadow Foxtail	<i>Festuca rubra</i>	Red Fescue
<i>Angelica sylvestris</i>	Wild Angelica	<i>Filipendula vulgaris</i>	Dropwort
<i>Anisantha sterilis</i>	Barren Brome	<i>Galium aparine</i>	Cleavers
<i>Anthyllis vulneraria</i>	Kidney Vetch	<i>Geranium robertianum</i>	Herb-Robert
<i>Arctium minus ssp.nemorosum</i>	Lesser Burdock	<i>Glyceria fluitans</i>	Floating Sweet-grass
<i>Arrhenatherum elatius</i>	False Oat-grass	<i>Glyceria notata</i>	Plicate Sweet-grass
<i>Atriplex patula</i>	Common Orache	<i>Heracleum</i>	Hogweed

<i>Avena fatua</i>	Wild-oat	<i>sphondylium</i> <i>Hieracium vagum</i>	Shrubby Hieracium
<i>Bellis perennis</i>	Daisy	<i>Holcus lanatus</i>	Yorkshire-fog
<i>Brachypodium sylvaticum</i>	False Brome	<i>Holcus mollis</i>	Creeping Soft- grass
<i>Bromus hordeaceus</i>	Soft-brome	<i>Hordeum murinum</i>	Wall Barley
<i>Calluna vulgaris</i>	Heather	<i>Hypericum hirsutum</i>	Hairy St John's- wort
<i>Calystegia silvatica</i>	Large Bindweed	<i>Hypericum pulchrum</i>	Slender St John's-wort
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	<i>Hypochaeris radicata</i>	Cat's-ear
<i>Carex flacca</i>	Glaucous Sedge	<i>Juncus acutiflorus</i>	Sharp-flowered Rush
<i>Carex hirta</i>	Hairy Sedge	<i>Juncus bufonius</i>	Toad Rush
<i>Centaurea nigra</i>	Common Knapweed	<i>Juncus effusus</i>	Soft-rush
<i>Centaureum erythraea</i>	Common Centaury	<i>Juncus inflexus</i>	Hard Rush
<i>Cerastium fontanum</i>	Common Mouse- ear	<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Cerastium tomentosum</i>	Snow-in-summer	<i>Lathyrus sylvestris</i>	Narrow-leaved Everlasting-pea
<i>Chaerophyllum temulentum</i>	Rough Chervil	<i>Leontodon autumnalis</i>	Autumn Hawkbit
<i>Chamerion angustifolium</i>	Rosebay Willowherb	<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Cirsium arvense</i>	Creeping Thistle	<i>Lolium perenne</i>	Perennial Rye- grass
<i>Cirsium palustre</i>	Marsh Thistle	<i>Lonicera periclymenum</i>	Honeysuckle
<i>Cirsium vulgare</i>	Spear Thistle	<i>Lotus corniculatus</i>	Common Bird's- foot-trefoil
<i>Conium maculatum</i>	Hemlock	<i>Lycium sp.</i>	Teapant-species
<i>Conopodium majus</i>	Pignut	<i>Matricaria discoidea</i>	Pineapple-weed
<i>Convolvulus arvensis</i>	Field Bindweed	<i>Medicago lupulina</i>	Black Medick
<i>Crepis capillaris</i>	Smooth Hawk's- beard	<i>Melilotus altissima</i>	Tall Melilot
<i>Cruciata laevipes</i>	Crosswort	<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Cynosurus cristatus</i>	Crested Dog's-tail	<i>Plantago major</i>	Greater Plantain
<i>Dactylis glomerata</i>	Cock's-foot	<i>Plantago maritima</i>	Sea Plantain
<i>Dactylorhiza fuchsii</i>	Common Spotted- orchid	<i>Poa annua</i>	Annual Meadow Grass

<i>Daucus carota</i>	Wild Carrot	<i>Poa trivialis</i>	Rough Meadow-grass
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Dryopteris filix-mas</i>	Male-fern	<i>Potentilla x mixta</i>	Hybrid Cinquefoil
<i>Prunella vulgaris</i>	Selfheal	<i>Sonchus oleraceus</i>	Smooth Sow- thistle
<i>Prunus spinosa</i>	Blackthorn	<i>Stachys sylvatica</i>	Hedge Woundwort
<i>Pteridium aquilinum</i>	Bracken	<i>Stellaria graminea</i>	Lesser Stitchwort
<i>Pulicaria dysenterica</i>	Common Fleabane	<i>Stellaria holostea</i>	Greater Stitchwort
<i>Ranunculus repens</i>	Creeping Buttercup	<i>Tamus communis</i>	Black Bryony
<i>Reseda lutea</i>	Wild Mignonette	<i>Taraxacum officinale</i> agg.	Dandelion
<i>Rosa canina</i>	Dog-rose	<i>Teucrium scorodonia</i>	Wood Sage
<i>Rubus dasycarpus</i>	Bramble	<i>Torilis japonica</i>	Upright Hedge- parsley
<i>Rumex acetosa</i>	Common Sorrel	<i>Trifolium hybridum</i>	Alsike Clover
<i>Rumex acetosella</i>	Sheep's Sorrel	<i>Trifolium medium</i>	Zigzag Clover
<i>Rumex conglomeratus</i>	Clustered Dock	<i>Trifolium pratense</i>	Red Clover
<i>Rumex crispus</i>	Curled Dock	<i>Trifolium repens</i>	White Clover
<i>Rumex obtusifolius</i>	Broad-leaved Dock	<i>Trisetum flavescens</i>	Yellow Oat- grass
<i>Rumex sanguineus</i>	Wood Dock	<i>Tussilago farfara</i>	Colt's-foot
<i>Salix cinerea</i>	Grey Willow	<i>Ulex europaeus</i>	Gorse
<i>Sambucus nigra</i>	Elder	<i>Urtica dioica</i>	Common Nettle
<i>Senecio erucifolius</i>	Hoary Ragwort	<i>Veronica beccabunga</i>	Brooklime
<i>Senecio jacobaea</i>	Common Ragwort	<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Senecio sylvaticus</i>	Heath Groundsel	<i>Vicia cracca</i>	Tufted Vetch
<i>Silene dioica</i>	Red Campion	<i>Vicia hirsuta</i>	Hairy Tare
<i>Sisymbrium officinale</i>	Hedge Mustard	<i>Vicia sativa ssp.segetalis</i>	Common Vetch
<i>Sonchus arvensis</i>	Perennial Sow- thistle	<i>Vicia sepium</i>	Bush Vetch
<i>Sonchus asper</i>	Prickly Sow-thistle	<i>Vicia sylvatica</i>	Wood Vetch

### The Guisborough Walkway, 1995- by Darroll Fryer

A considerable amount of planting has taken place at the car-park pond. Newly recorded species are: Lesser Water-parsnip (*Berula erecta*), Pedunculate Water-starwort (*Callitriche brutia*), Common Water-starwort (*Callitriche stagnalis*), Galingale (*Cyperus longus*), Bristle Club-rush (*Isolepis setacea*), Curly Waterweed (*Lagarosiphon majus*), White Water-lily (*Nymphaea alba*), Yellow Water-lily (*Nuphar lutea*), Fringed Water-Lily (*Nymphoides peltata*), Greater Spearwort (*Ranunculus lingua*), Pond Water-crowfoot (*Ranunculus peltata*) Water-soldier (*Stratiotes aloidea*). The presence of the hybrid Sweet-grass (*Glyceria x pedicellata*) requires confirmation. Lesser Water-parsnip has also been recorded at the small ponds along with Common Duckweed (*Lemna minor*). Corncockle (*Agrostema githago*) after several years absence was again evident on the walkway but at a different location. Field Scabious (*Knautia arvensis*) was also recorded. It has been announced this month that a visitor and information centre is to be built at the Pinchinthorpe car-park. The project is a partnership between the County Council, the North Yorkshire Moors National Park and Forest Enterprise. The centre should be ready for Easter 1996.



## **Cliff Rigg**

### **Preface- by Richard Pepper**

The following notice was issued to the members of the Cleveland Literary and Philosophical Society early in 1881; “*There will be a special general meeting of the Members of this Society on Monday, the 4th April 1881, at 8 p.m. to consider the formation of a Field Club.....*” [Punch 1932]

The meeting was indeed held, with fourteen people in attendance and “*it was resolved to form a Club to be known as the ‘Cleveland Naturalists’ Field Club*”. Even before this however an association with Cliff Rigg had been established when the Tees Valley Naturalists’ Field Club held its first meeting on the 18th April 1876 at Great Ayton for the purpose of studying ‘the whinstone dyke’, and prior to this Volume 3 Issue 1 of the Science Transactions of the Cleveland Literary and Philosophical Society [March 1869] was devoted to an article on the ‘Whin Dyke of Cleveland’ by Thomas Allison [Punch 1932].

The first President of the Cleveland Naturalists’ Field Club was Dr. W. Y. Veitch, and the inaugural Proceedings of the society published in 1889 contained an article by him entitled ‘Geological Notes and Notes on the Cleveland Dyke’. However it is to Mr. J.J. Burton that the Field Club must turn for its most fertile involvement with Cliff Rigg. He was elected the first Honorary Secretary at the inaugural meeting in 1881, and was a member of the Society for over fifty years until his death on the 14th November 1931. His interest in the Cleveland Dyke reached its scientific apex with the definitive local article published in Volume IV Part 2 of the Proceedings [Burton, 1932]. His interest was not entirely from the point-of-view of the natural historian, since it appears that he owned the mineral rights for working the whinstone on Cliff Rigg for a number of years. How appropriate then that the Field Club should turn its attention in that direction.

### **Introduction- by Richard Pepper**

As viewed from the vicinity of Great Ayton railway station, Cliff Rigg is an imposing forward projection of the lower Cleveland escarpment. It reaches a maximum elevation of 224.6 metres at 57451170, approximately one kilometre south of Roseberry Topping summit. From the plateau level of the area drained by the River Leven it rises some 110 metres, with a more imposing south side, facing Great Ayton itself.

Its ridge-like morphology has an axis elongated at approximately 290 degrees (magnetic). After crossing lower ground this is continued to the west as ‘Langbaugh Rigg’, and to the east as ‘Gribdale Rigg’. The derivation of the name ‘Cliff’ is unknown; it might refer to the natural outcrops which must once have existed as evidenced by the following observation. “*On Cliff Rigg its blocks (the basaltic rock) lying bare on the surface have been compared to prostrate pilasters half buried in ruins*” [Phillips, 1835].

The natural contours have been much modified over the past 125 years by quarrying and underground mining along the central axis, and by spoil from these

workings tipped on the south side. In addition there have been significant extractions along the lower southern slopes, as well as collapse along the central workings.

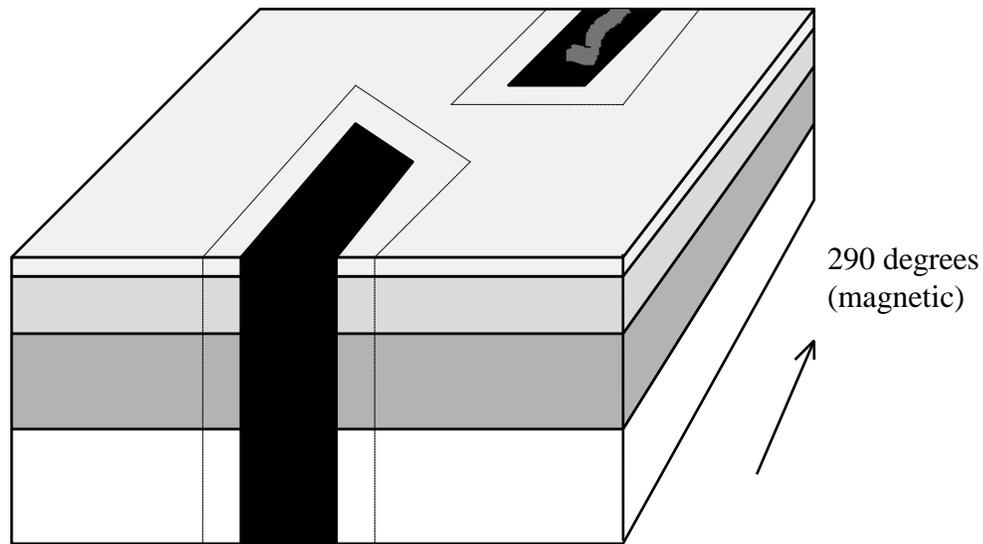
A proposal in the late 1980's to use part of the area as a landfill site was rejected, thereby leaving a unique combination of natural history in a modified and unmodified state.

So important is the site considered that it is included in the Geological Conservation Review by English Nature and the top section designated a Site of Special Scientific Interest. To give coherence, much of the rest has been designated a Regionally Important Geological Site. And recognising its continuity with Roseberry Common and Topping the National Trust is now the owner.

### Geology- by Richard Pepper

#### The General Geological Model

N.B. This is not drawn to scale. The top is the projected highest point on Cliff Rigg. The sides approximate in position to the flanks of the Rigg. The base approximates to the lowest point of Cliff Rigg Quarry.



- |                                                                                     |                                  |                                                                                     |                                  |
|-------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------|----------------------------------|
|  | Igneous Rock                     |  | Cleveland Ironstone Formation    |
|  | Outer Limit of Metamorphism      |  | Staithes Sandstone Formation     |
|  | Central Breccia                  |  | Redcar Mudstone Formation (part) |
|  | Whitby Mudstone Formation (part) |                                                                                     |                                  |

Fundamentally, the geology of Cliff Rigg is very straightforward. The nearly horizontal, variably fossiliferous, succession of Lower Jurassic rocks extends from the upper part of the Redcar Mudstone Formation to the lower part of the Whitby Mudstone Formation. As a 'central sheet' there is the vertical igneous rock of the Cleveland Dyke, offset to the south at the eastern end of Cliff Rigg. The heat from the magma, which crystallised to form the igneous rock has metamorphosed the host rocks adjacent to the dyke.

Subsequent denudation (and deposition along the lower slopes) has produced the ridge-like form, presumably because of the greater durability of the central sheet of igneous rock. Extraction of various rocks has produced excellent exposures.

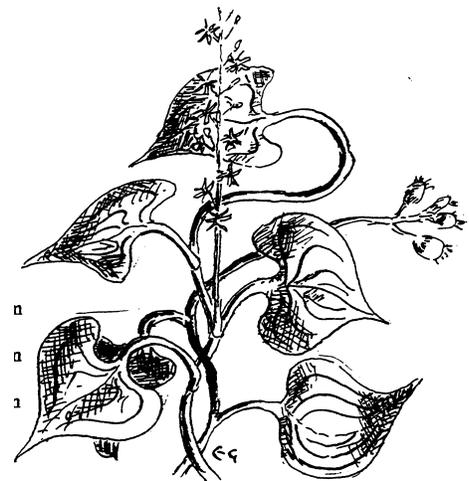
### Details of the Jurassic Succession

The sedimentary succession in Cliff Rigg is primarily of Lower Jurassic age, comprising the top of the Redcar Mudstone Formation, the whole of the Staithes Sandstone Formation, the whole of the Cleveland Ironstone Formation, and the bottom 10m of the Whitby Mudstone Formation [see 'General Geological Model'].

The top of the Redcar Mudstone Formation is here represented by perhaps 30m of rock exposed in the western part of the quarry, widened in the late 1970's for road-fill. The succession is represented by mid-grey siltstones, occasionally having layers of iron-rich nodules. Fossils are relatively rare and comprise bivalves and gastropods [locality A].

The Staithes Sandstone Formation is almost completely exposed, but in badly degrading quarry sides on the south side, or high up on the north face of the quarry. The succession is as follows [Pepper, unpublished data][Locality B]

Micaceous sandstone	1m50cm
Alternating fine sandstone and dark siltstones	c3m
Bioturbated Siltstones	1m53cm
Massive fine sandstone	97cm
Cross-laminated fine sandstone	1m55cm
Massive fine sandstone	53cm
Bioturbated Siltstones	1m11cm
Cross-laminated fine sandstone	1m03cm
Red Clay	2cm
Bioturbated Siltstones	6m50cm
Bioturbated Siltstones	1m26cm
Fine sandstone with shell lenses	92cm
Shell Bed	5cm
Fine Sandstone	7cm
Impersistent Shell Bed	4cm
Fine Sandstone	38cm
Shell Bed	9cm
Fine Sandstone	13cm
Shell Bed	8cm
Fine bioturbated sandstone with scattered	96cm



shells

Fine bioturbated sandstone 1m

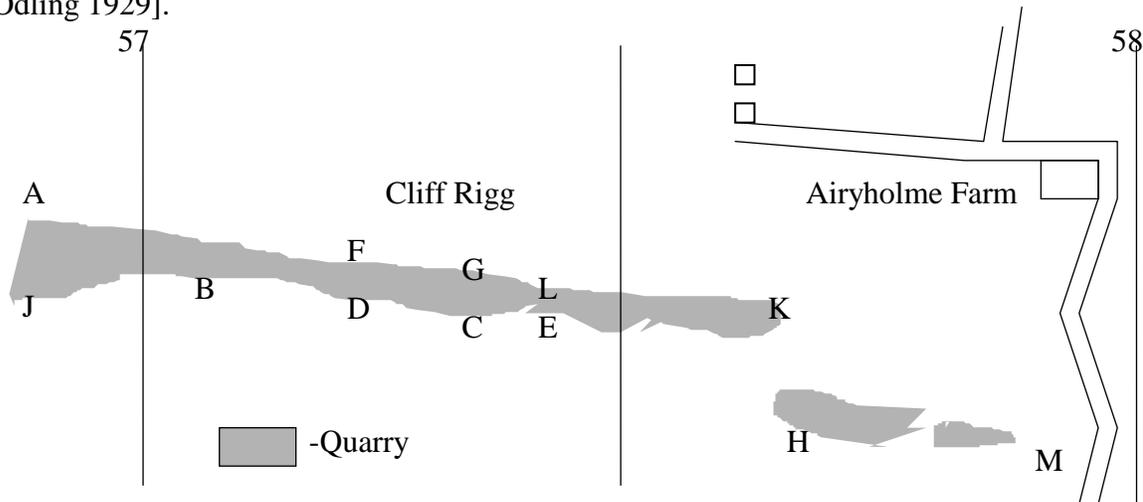
As can be seen from the accompanying succession the Staithes Sandstone Formation is essentially an alternation of fine-grained sandstones generally mid-yellow in colour and darker siltstones. Periodically, particularly towards the base, there are abundant decalcified moulds and casts of fossils, primarily bivalves, but with rarer brachiopods, crinoid ossicles, brittle stars and ammonites. The siltstones often show evidence of burrows, but they are otherwise usually devoid of fossils. Sedimentary structures are present in the form of ripples, cross-laminations, and load-casts.

The Staithes Sandstone Formation continues upwards into the Cleveland Ironstone Formation, which is again almost completely exposed, particularly in the highest quarry in Cliff Rigg. The succession is as follows [Chowns, 1968] [Locality C,D].

Shale-siderite mudstone concretions	2m 70cm
Shelly siderite mudstone nodules	7.5cm
Silty shales	1m 77.5cm
Top Main Dogger	90cm
Sulphur band	
Main Seam-Top Block (siderite chamosite oolite)	95cm
Middle Band	32.5cm
Main Seam- Bottom Block (siderite chamosite oolite)	30.0cm
Blue mottle	17.5cm
Black Hard	30cm
Eston Shell Bed	20cm
Pecten Seam (siderite mudstone/chamosite shale)	1m 35cm
Dark grey Shale	25cm
Two Foot Seam	62.5cm
Dark shale with nodules at base	74cm
Dark shale	86cm
Raisdale Seam	41cm
Laminated silty shale	1m 70cm
Medium-dark grey shale	5m 4cm
Avicula Seam	30cm
Light grey silty shale	20cm
Laminated siltstone	25cm
Medium grey silty shales with bands of nodules	5m 30cm
Dark grey shales	1m 28cm
Osmotherley Seam	13cm



Again, it is evident that the succession is essentially an alternation, this time of siltstones and six named ironstones. The siltstones are again dark grey, or even green and tend not to carry body fossils. The ironstones are in the main orange-brown weathering (due to oxidation of the silicates and carbonates), oolite bearing rocks with body fossils (usually de-calcified) including bivalves, brachiopods, and belemnites. Three analyses of Main Seam ironstone from the near-by Roseberry Mine gave 29.44%, 28.83%, and 28.32% iron [Odling 1929].



**Sketch Location Map-not to scale**

At the very top of the quarry, the base of the Whitby Mudstone Formation is represented by nearly the complete thickness of the Grey Shale member - as the name suggests a well laminated silty shale, with occasional iron nodule bands, and with few fossils- chiefly the imprints of ammonites and bivalves.

The top of Cliff Rigg is of course an erosion surface but a more complete succession of the Whitby Mudstone can be studied on the adjacent escarpment.

The general succession, the rapid alternations, the fossil types, and the sedimentary structures all strongly suggest that the Lower Jurassic rocks were deposited in a shallow (generally no more than a few metres deep) open sea. Evidence from a wider area indicates that the sea may have been closer to the equator than the present geographical position and therefore with a higher than average temperature than the local North Sea.

### **Details of the Cleveland Dyke and Associated Features**

A remarkable set of geologic, topographic, economic, and historic circumstances have combined to make Cliff Rigg a unique natural history site.

In the mid-nineteenth century there was a widespread requirement for roadstone which resulted in Leeds Corporation acquiring the mineral rights for most of Cliff Rigg and working the dyke rock from 1868 to 1883 [Pepper, 1982]. This and subsequent working up to the First World War produced continuous exposure of rock through the centre of the site. Aside from some extraction in the 1970's the area has remained largely

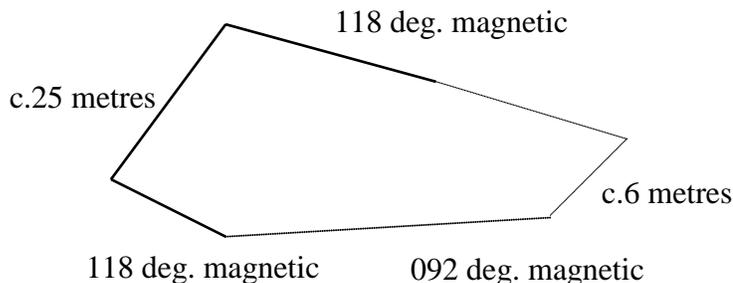
untouched, and with local concerns fending off a proposal for landfill, and subsequent purchase by the National Trust, the geologic interest can hopefully be conserved.

By far the most important aspect of the geology is the Cleveland Dyke and its associated features. Dykes (discordant, relatively narrow sheets of igneous rock) are not in themselves uncommon and can be viewed in many places. Indeed the Cleveland Dyke is exposed in several quarries and some natural exposures along its length. However, exposures are relatively uncommon in lowland Britain, and exposures which allow an appreciation of the full width of the dyke, its margins, and beyond into host rock on both sides are rare indeed. Add to this some unusual geological features and this is a site worthy of consideration.

Indeed, it has been considered on many occasions during the past one hundred and fifty years, resulting in a significant amount of published and unpublished material.

The width of the dyke was given as 27.82m in the lower workings of Cliff Rigg [Burton 1932]. In the summit area [Locality E], the width can be measured as 25.8m, and this seems to be fairly constant along the surface exposures in the main quarry. In general the margins approximate to the vertical, as may be seen in the imposing 'scab' on the north side [Locality F] although several places [e.g. Locality G] demonstrate a dip to the north-north west of up to  $10^{\circ}$  and sometimes  $20^{\circ}$  from the vertical. The direction of the edges is usually about  $298^{\circ}$  -  $118^{\circ}$  (magnetic), although in detail the margins may deviate from this over short distances by 'stepping' to the side [Locality H].

At two locations the dyke margin departs from the general line. At the very western end of the main quarry, the south side margin trends in the direction of  $094^{\circ}$  (magnetic) [Locality J], apparently producing a 'dog-leg,' which would line up with a former exposure in Dingedow quarry. Much more important is the exposure at the eastern end of the main quarry. Here, on the south side of the dyke, the margin is seen to change direction in an easterly direction from being  $118^{\circ}$  (magnetic) to being  $092^{\circ}$  (magnetic). Since the north side does not seem to change direction, it is believed that this portion of the dyke terminates by the south margin striking towards the north margin and then coming round a 'blunt end' with a width of 6.1m [Locality K].



The junction of the igneous rock with the host rock is sharply delineated and is particularly well seen on the north side [Location L] where the enclosing Jurassic rock has been removed during working the igneous rock to relieve the pressure and prevent collapse into the quarry.

The first few centimetres of igneous rock, adjacent to both margins is either very finely crystalline or even volcanic glass [MacDonald et al 1988]. This zone, along with the adjacent few centimetres of dyke rock often shows varying degrees of alteration, producing a rather pale coloured result, only distinguishable in hand-specimen by its off-white modified feldspars. The general size of the groundmass increases towards the centre of the dyke, but the phenocrysts (larger crystals) appear uniform in maximum dimension right from the margin. A noted feature [Teall 1884] is that the phenocrysts may be broken or fractured.

The larger phenocrysts, up to 6mm in maximum dimension are plagioclase feldspar with a typical composition  $\text{Ca}_6\text{Mg}_{46}\text{Fe}_{48}$  [MacDonald et al 1988], whilst the smaller phenocrysts are various pyroxenes. The groundmass also contains plagioclase, pyroxene, probable magnetite, and small amounts of quartz, alkali feldspar, biotite and pyrite [Holmes and Harwood 1929]. A calculated mineralogical composition suggests 52% feldspar, 34% pyroxene and 4% magnetite, with the rest as volcanic glass.

Overall this gives a rock, which is blue-grey in colour, obviously crystalline, with a tendency towards a conchoidal fracture and a relative density of 2.77.

The chemistry of the Cleveland Dyke rock has been investigated on numerous occasions [MacDonald et al 1988, Hornung et al 1966] and found to be as follows [the results conventionally expressed as oxides of the main elements] :-

	<b>Percentage (%)</b>
SiO <sub>2</sub>	53.30
TiO <sub>2</sub>	1.27
Al <sub>2</sub> O <sub>3</sub>	14.00
Fe <sub>2</sub> O <sub>3</sub>	3.25
FeO	6.75
MnO	0.13
MgO	4.20
CaO	5.14
Na <sub>2</sub> O	3.56
K <sub>2</sub> O	2.18
H <sub>2</sub> O	1.84

Scattered vesicles and amygdales occur throughout the dyke. However there seems to be a zone in which they are concentrated, extending discontinuously along the north side. Generally starting between 2.5m and 4.0m in from the dyke margin, the zone approximates to 1.75m in width and contains vesicles up to 1.1cm in diameter, and having a density of 17 per 10cm<sup>-2</sup> [Pepper, unpublished data]. The vesicle infill includes quartz, calcite, chlorite, epidote, pyrite and pectolite [Emeleus et al 1994].

Xenoliths (foreign rock bodies in igneous rocks) include relatively rare host rock inclusions, and small angular finely-crystalline masses of dark-grey igneous rock.

In general, the appearance of the igneous rock would suggest a basalt, but its detailed mineralogy and chemistry indicate an augite andesite.

Fracturing (jointing) is a very obvious feature in all exposures of the dyke. This is complex but can be sub-divided into those fractures which are parallel or sub-parallel to the dyke margin, and those which are approximately horizontal, perpendicular to the margin and rudely columnar in form [Emeleus et al 1994]. The density of the joints varies significantly from place to place, as does the degree to which fluids (presumably ground-water) has penetrated along these fractures and produced weathering in the igneous rock. The degree of alteration, including oxidation of the iron minerals is sometimes only millimetres in from the joints, whereas on other occasions the penetration may be several centimetres. This had a significant effect on the quarrying of the “whinstone”, areas of “deep” weathering being left as “rubbish” rather than extracted [Pepper 1982]. Closely spaced jointing and the effect of percolating fluids has produced characteristically rounded blocks made of several concentric skins, and known as “spheroidal weathering”.

The temperature of the magma at the moment of introduction into the host Lower Jurassic rocks may have been in the vicinity of 1000 °C. Heat will therefore have been conducted into these adjacent rocks, raising the temperature and inducing a metamorphic effect. In general the alteration is slight in the sandstones (inducing a recrystallisation of the quartz within a few centimetres of the margins of the dyke) and the ironstones (although this statement was made at the end of the last century “when in a state of liquid lava (the dyke) come up through the bed of ironstone, it smelted the rock into malleable iron, which was brought to the smithy and forged into bars....” [Dixon 1891].

The effect on the silty shales is much greater, visibly extending in some cases a few metres from the margin of the dyke. Close to the igneous rock the new rock is pale yellow in colour and rather more blocky and durable than the unaffected shale. With increasing distance the rock becomes more mottled, with the growth of distinct minerals as ‘spots’. Gradually the original features of the host rock are attained, and there is no visible sign of thermal alteration.

Much more obvious in the host rocks is the ‘fracture aureole’. This is a zone of dyke-parallel jointing, again most obvious in the finer grained shales, but also present in the sandstones and ironstones. The frequency of these joints can reach 37 per 50 centimetres of shale at a distance of 3-3.5 metres from the dyke margin [Boland, Toland, Sanderson, Lyth unpublished data 1976]. The frequency then decreases with increasing distance, but may still be present hundreds of metres away from the dyke margin [Brown, Stow unpublished data 1992]. Occasionally, as in the highest quarry on Cliff Rigg- there is evidence of movement on the fractures producing dyke-parallel normal faulting.

However there is little evidence to suggest that the magma was injected along the line of a pre-existing fracture, and certainly not a fault. On Cliff Rigg the indications are that the equivalent stratum of host rock on either side of the dyke is nearly at the same level, with any discrepancy accounted for by the slight inclination of the host rock [Pepper unpublished data].

As is evident from the ‘General Geological Model’ the main exposure of the dyke ends abruptly along the centre line of Cliff Rigg, and there is substantial evidence that the dyke itself terminates at least at this altitude. However the dyke is not lost, but is offset approximately 90 metres to the south., as is proved by a further set of quarries.

The fundamental features are unchanged and are much as described above. However there is one important addition. The quarries (and mines?) are divided in two by a central screen of unworked rock. This is parallel to the dyke margins, approximately 120m long, 8-10m wide and at least 10m high [Lyth unpublished data 1979]. The rock consists of variably sized angular fragments of vesicular/amygdaloidal andesite and metamorphosed silty shales, in changing proportions. The whole suite is often cemented by calcite which in places develops characteristic crystal form. The metamorphosed silty shale is recognisable as Jet Rock Member by its characteristic lamination and in that it contains the zone fossil *Harpoceras falciferum*. Since the host rock fragments and dyke rock are intimately mixed the whole is likely to have been formed as an intrusive explosion breccia.

Because the dyke at Cliff Rigg cross-cuts Lower Jurassic rocks it must be of a younger age. Three radioactive-dating ages from dyke rocks are 57.3+/- 1, 57.4 +/-0.9, 60.9 +/- 1.3 million years [quoted in Evans 1973]. This places the 'whinstone' as early Tertiary.

The Tertiary igneous rocks of Northern Ireland and N.W. Scotland are also approximately of this age and since a dyke of similar detailed chemistry, mineralogy, direction, alignment and age traverses Northern England and South-west Scotland it has been suggested that the Cleveland Dyke focuses on the Isle of Mull and could be 430 km in length. Surprisingly perhaps it has been calculated [MacDonald et al 1988] that a magma source beneath Mull could travel outwards through the rocks of the upper crust at 1-5 ms<sup>-1</sup> causing dyke injection along its entire length in 1-5 days!

The palaeomagnetism of the dyke rock at Cliff Rigg has also been analysed [Giddings et al 1974] and found to have an inclination of -65°. The negative value indicates injection during a period of reversal of the earth's magnetic field and since there is a relationship on average between magnetic inclination and latitude it can be calculated that the location of what is now Cliff Rigg might only have been 47.5 ° north when the dyke was formed.

### **Pleistocene Deposits**

It is assumed that for most of the sixty million years since the injection of the Cleveland Dyke what is now the locality of Cliff Rigg will have been undergoing processes of weathering and erosion. Research suggests that up to 2km of rock may have been removed from vertically above the area during this time interval.

What is certain is that the fundamental contours of Cliff Rigg are essentially denudation features produced by various erosion processes acting upon the differential susceptibilities of the vertical dyke rock and its enclosing near horizontal host rocks. It is presumably no accident therefore that the axis of the ridge is coincident with the 25m wide dyke, since erosion processes will have been slightly less effective here than the adjacent host rocks.

No doubt these erosion processes will have included running water, whether in the ground or as rivers. What is less certain is the impact of the sea: but it is perhaps noteworthy that the top of Cliff Rigg is remarkably flat along the trend of the dyke- a

circumstance most easy to explain if this had been at some time in the past a wave-washed platform [Pepper unpublished data].

Similarly the effect of glaciation and peri-glaciation is difficult to ascertain as far as erosion is concerned. More certainty attaches to glacial and fluvio-glacial deposition. In general the glacial deposits thicken down the flanks of Cliff Rigg from a thin veneer at the crest to considerable spreads on the Vale of Cleveland. The following is believed to be reasonably typical [I.G.S. Report] and derives from a borehole at 57711118

		Thickness	Depth	
	Soil	0.3m	0.3m	
Till	Clay-brown, pebbles of Carboniferous and Permo-Trias	2.4m	2.7m	
		Clay-brown laminated with sandy partings	0.5m	3.2m
			Clayey sand	7.7m
Till	Clay, red-brown, sandy, small pebbles	0.7m	11.6m	
		Clayey sand	13.4m+	25m

That the succession is generally similar, but differs in detail is borne out by the following observations [Pepper, unpublished data] at Locality M.

Till	Red Clay with large erratics	Thickness	
		0m 92cm	
	Sand and Gravel with occasional clay-rich layer	6m42cm	
Till	Dark stiff blue clay	0m 92cm	
		Red Clay	0m 61cm
			Whinstone

Other exposures of glacial and inter-glacial material are rare, but similar successions are believed to continue right round the lower flanks of Cliff Rigg.

The degree of natural landscape alteration since the retreat of the ice perhaps 18000 years ago is believed to be minimal although there is considerable evidence for rotational slips on the north side of Cliff Rigg round to Newton Wood.

As the foregoing details readily illustrate Cliff Rigg is an extremely important, not to say unique example, of a wide variety of well exposed geological and geomorphological phenomena, fully justifying its status as an S.S.S.I. and R.I.G.S.

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### Botanical Report- Cliff Rigg Quarry- by Ian Lawrence

Taking into account that the area surveyed basically made up of solid rock which supported very little vegetation, it is only where loose rock particles have accumulated or where fissures in the solid rock are wide enough to contain sufficient soil allowing growth to occur, that certain hardy species have been able to take hold and flourish.

Where moss species have colonised areas of the rock floor species such as Mouse-ear Hawkweed (*Pilosella officinarum*), Self-heal (*Prunella vulgaris*), Barren Strawberry (*Potentilla sterilis*), Wall Speedwell (*Veronica arvensis*), and Bird's-foot Trefoil (*Lotus corniculatus*) are able to thrive. The acide nature of the soil ( a mean Ph value of 6.7) also limits the number of species to be found there and gives rise to such plants as Foxglove (*Digitalis purpurea*), Heath Groundsel (*Senecio sylvaticus*), Wood Sage (*Teucrium scorodonia*) and the grasses Wavy Hair-grass (*Deschampia flexuosa*), Early Hair-grass (*Aira peacock*), and Silver Hair-grass (*Aira caryophyllea*) to flourish.

The whole area is well colonised by Gorse (*Ulex europaeus*) and Broom (*Cytisus scoparium*) both of which have the ability to get their roots into cracks and crevices in such places. Similarly the Penduculate Oak (*Quercus robur*) and Silver Birch (*Betula pendula*) are able to thrive in such situations.

Other plants which are able to exist in these 'rocky' conditions and are generally uncommon in our area are :

<i>Aphanes inexpectata</i>	Slender Parsley-piert	
<i>Cerastium semidecandrum</i>	Little Mouse-ear	a coastal dune species in Cleveland
<i>Filago vulgaris</i>	Cudweed	Occurring along the trackside on the outer edge of the quarry
<i>Mysostis discolor</i>	Changing Forget-me-not	
<i>Trifolium striatum</i>	Soft Clover	Occurring along the trackside on the outer edge of the quarry
<i>Vicia staiva ssp. nigra</i>	Narrow-leaved Vetch	
<i>Vulpia bromoides</i>	Squirrel-tail Fescue	
<i>Hypericum pulchrum</i>	Slender St.John's-wort	
<i>Centarium erythraea</i>	Common Centaury	
<i>Cerastium glomeratum</i>	Clustered Mouse-ear	
<i>Arabidopsis taliana</i>	Thale-cress	
<i>Arenaria serpyllifolia</i>	Thyme-leaved Sandwort	

Altogether 85 flowering plants (including shrubby species)  
 5 fern species  
 3 rush species  
 and 7 tree species were recorded.

### Bryophytes- by John Blackburn

Three visits were made to the quarry at different times of the year. Species found on the open ground of the quarry included five common species of *Barbula*, *Bryum argentum*, *B. bicolor*, *Ceratodon purpureus*, *Dicranella heteromalla*, *Funaria hygrometrica*, *Leptobryum pyriforme*, *Pohlia nutans*, *P. wahlenbergii*, three *Polytrichum* species and *Pottia truncata*. Where grass had developed *Atrichum undulatum*, *Brachythecium rutabulum*, *Cirriphyllum piliferum*, *Dicranum scoparium*, *Pseudoscleropodium purum*, and *Rhytidiadelphus squarrosus* had become established. In shade, *Eurhynchium praelongum* and *Mnium hornum* were found. Epiphytes were sparse with *Dicranoweisia cirrata*, *Hypnum cupressiforme*, *H. mammillatum* and *Orthotrichum diaphanum* and , on rotting wood, *Aulacomnium androgynum*. Nothing unexpected was found during the survey. The full list of 37 species is as follows

<i>Atrichum undulatum</i>	<i>Aulacomnium androgynum</i>	<i>Barbula convoluta</i>
<i>B.cylindrica</i>	<i>B.fallax</i>	<i>B. hornschurchiana</i>
<i>B.unguiculata</i>	<i>Brachythecium albicans</i>	<i>B.rutabulum</i>
<i>Bryum argentum</i>	<i>B.bicolor</i>	<i>B.capillare</i>
<i>Calliargon cuspidatum</i>	<i>Campylopus introflexus</i>	<i>Ceratodon purpureus</i>
<i>Cirriphyllum piliferum</i>	<i>Dicranella heteromalla</i>	<i>Dicranoweisia cirrata</i>
<i>Dicranum scoparium</i>	<i>Eurhynchium praelongum</i>	<i>Funaria hygrometrica</i>
<i>Grimmia pulvinata</i>	<i>Hypnum cupressiforme</i>	<i>H. jutlandicum</i>
<i>H. mammillatum</i>	<i>Leptobryum pyriforme</i>	<i>Mnium hornum</i>
<i>Orthotrichum diaphanum</i>	<i>Pohlia nutans</i>	<i>P. wahlenbergii</i>
<i>Polytrichum formosum</i>	<i>P. juniperinum</i>	<i>P. piliferum</i>
<i>Pottia truncata</i>	<i>Pseudoscleropodium purum</i>	<i>Rhytidiadelphus squarrosus</i>

Liverworts

*Lophocolea bidentata*

### Fungi- by Alex Weir

The following fungi were recorded on a visit on the 11th October 1995, after one of the hottest summers on record. Consequently the ground was very dry.

Wood on West side of quarry

*Mycaena pura*

*Hypholoma fasciculare*

*Coprinus atramentarius*

*Armillaria mellea*

*Ganoderma aplanatum*

*Stereum hirsutum*

*Coliosporum tussilaginia*

Tar Spot

Common Ink Cap

Honey Fungus

Artists fungi

Hairy Stereum

<i>Auricularia auricula</i>	Jews Ear
<i>Boletus chrysenteron</i>	Red Cracking Bolete
<i>Aminita rubescens</i>	Blusher
<i>Laetiporus sulphureus</i>	Chicken-in-theWood
<i>Collybia butyracea</i>	Buttercap
<i>Nebria bervisollis</i>	

At head of quarry

<i>Lepista procera</i>	Parasol
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Wood East of quarry

<i>Collybia peronata</i>	Wood Woolly Foot
<i>Dacromyces stillatus</i>	
<i>Hygrocybe conica</i>	Conical Wax Cap
<i>Paneolus ater</i>	
<i>Calocera viscosa</i>	
<i>Clytocybe fragrans</i>	

These species were found in the woods on the margins of the quarry. *L.sulphureus* (Chicken-in-the-Woods) was found on a dead Mountain Ash. *L .procera* (Parasol) was found at the most South-easterly end of the quarry, in grassland on the quarry margin.

### Terrestrial Molluscs- by Tony Wardaugh

#### Cliff Ridge Wood

<i>Cochlicopa lubrica</i>	Slippery Snail	<i>Vitrea crystallina</i>	Crystal Snail
<i>Lauria cylindracea</i>	Chrysalis Snail	<i>Vitrea contracta</i>	Lesser Crystal Snail
<i>Acanthinula aculeata</i>	Prickly Snail	<i>Nesovitrea hammonis</i>	Rayed Snail
<i>Punctum pygmaeum</i>	Dwarf Snail	<i>Aegopinella pura</i>	Glass Snail
<i>Discus rotundatus</i>	Rounded Snail	<i>A. nitidula</i>	Smooth Snail
<i>Arion ater</i>	Black Slug	<i>Oxychilus cellarius</i>	Cellar Snail
<i>A. circumscriptus</i>	Bourguignat's Slug	<i>O. alliarius</i>	Garlic Snail
<i>A. distinctus</i>	Garden Slug	<i>Limax maximus</i>	Great Slug
<i>A. intermedius</i>	Hedgehog Slug	<i>Deroceras reticulatum</i>	Field Slug
<i>Vitrina pellucida</i>	Pellucid Snail	<i>Euconulus fulvus</i>	Tawny Snail
		<i>Cepaea nemoralis</i>	Brown-lipped Banded Snail

The above were recorded during a series of visits from 1988 to 1995 inclusive. The list may well not include all of the terrestrial molluscs occurring in the wood but it is highly probable that it contains the very large majority. This survey was part of a larger study of 17 woodlands in the area, details of which are being published elsewhere (Journal of Conchology, in press). Work is ongoing but at the time of writing, Cliff Ridge Wood ranks 16th among the 17 woodlands in terms of species numbers (21 in a range of 20 to 39) and none of the species recorded are of particular note. This paucity of species is probably due to a combination of the dryness of the wood and past disturbance caused by mineral extraction. Interestingly, Newton Wood has a similarly poor molluscan fauna in spite of the presence of some moist areas. Here, 22 species have been recorded from 1985 to 1994 inclusive with just one being of note, *Leiostyla anglica* (The English Crysalis Snail), which is said to be characteristic of ancient woodland. Newton Wood has also suffered disturbance due to mineral extraction, partial clear felling and sheep grazing in the past. Currently the third woodland in this area, Airy Holme Wood, is being investigated and work is almost complete. To date, 35 species have been recorded and the site is undoubtedly one of the richest and most important for terrestrial molluscs in the Cleveland area, for example comparable in species number and quality with Wilton Wood, Saltburn Gill, and Mulgrave Woods. These findings bear out earlier investigations of the molluscs of Airy Holme Wood by J.W. Watson (Naturalist, 1984, pp.228-230) and by the Yorkshire Conchological Society in 1972 (Adrian Norris, personal communication). Like Cliff Ridge and Newton Wood, Airy Holme shows signs of extensive past disturbance due to mineral extraction but it is much more moist in places, which perhaps explains its comparative species richness with respect to terrestrial molluscs.

### Cliff Ridge Quarry

<i>Lauria cylindracea</i>	Chrysalis Snail	<i>Discus rotundatus</i>	Rounded Snail
<i>Arion ater</i>	Black Slug	<i>A. circumscriptus</i>	Bourguignat's Slug
<i>A. intermedius</i>	Hedgehog Slug	<i>Vitrina pellucida</i>	Pellucid Snail
<i>Aegopinella pura</i>	Glass Snail	<i>Oxychilus cellarius</i>	Cellar Snail
<i>Boetgerilla pallens</i>	Slug	<i>Limax marginatus</i>	Tree Slug
<i>Deroceras caruanae</i>	Slug		

Virtually all of the above are widespread and common. The slug *B. pallens* is something of an exception, being an introduced species first recorded in the British Isles in 1972. It is spreading rapidly and this is the fourth locality in which it has been found in the Cleveland area. This species and the slug *D. caruanae* are indicative of human disturbance.

### Millipedes

*Glomeris marginata*

### Woodlice

*Philoscia muscorum*

*Ommatoiulus sabbulosus*

*Oniscus asellus*

*Trichoniscus pusillus*

**Birds**

<i>Willow Warbler</i>	<i>Chiff-chaff</i>	<i>Whitethroat</i>
<i>Chaffinch</i>	<i>Yellowhammer</i>	<i>Wren</i>
<i>Song Thrush</i>	<i>Blackbird</i>	<i>Stock Dove</i>

**Butterflies**

<i>Pieris brassicae</i>	Large White
<i>P. napi</i>	Small White
<i>P. napi</i>	Green-veined White
<i>Anthocharis cardamines</i>	Orange Tip
<i>Lycaena phlaeas</i>	Small Copper
<i>Vanessa atalanta</i>	Red Admiral
<i>Aglais urticae</i>	Tortoiseshell
<i>Maniola jurtina</i>	Meadow Brown
<i>Ochlodes venatw</i>	Large Skipper
<i>Thymelicus sylvestris</i>	Small Skipper
<i>Aphantopus hyperantus</i>	Ringlet

**The Flora of Cliff Rigg Quarry-by the Botanical Team**

KEY TO SPECIES FREQUENCY

R Rare, usually just one plant.      O Occasional.  
 F Frequent      A Abundant  
 L Local. A few scattered plant or when used with 'O', 'F' or 'A' indicating that the latter frequency is in a small area.

Fr.	Scientific Name	Common Name	Fr.	Scientific Name	Common Name
F	<i>Acer pseudoplatanus</i>	Sycamore	L	<i>Achillea millefolium</i>	Yarrow
F	<i>Aira caryophyllea</i>	Silver Hair-grass	F	<i>Aira praecox</i>	Early Hair-grass
L	<i>Alliaria petiolata</i>	Garlic Mustard	R	<i>Allium ursinum</i>	Ramsons
R	<i>Alopecurus geniculatus</i>	Marsh Foxtail	F	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass
O	<i>Anthriscus</i>	Cow Parsley	L	<i>Aphanes</i>	Slender Parsley-

Fr.	Scientific Name	Common Name	Fr .	Scientific Name	Common Name
	<i>sylvestris</i>			<i>inexpectata</i>	piert
L	<i>Arabidopsis thaliana</i>	Thale Cress	O	<i>Arctium minus ssp.nemorosum</i>	Lesser Burdock
O	<i>Arenaria serpyllifolia</i>	Thyme-leaved Sandwort	O	<i>Arrhenatherum elatius</i>	False Oat-grass
O	<i>Artemisia vulgaris</i>	Mugwort	L	<i>Athyrium filix-femina</i>	Lady-fern
O	<i>Bellis perennis</i>	Daisy	L	<i>Brachypodium sylvaticum</i>	False Brome
L	<i>Bromus hordeaceus</i>	Soft-brome	O	<i>Campanula rotundifolia</i>	Harebell
O	<i>Capsella bursa-pastoris</i>	Shepherd's-purse	R	<i>Cardamine hirsuta</i>	Hairy Bitter-cress
L	<i>Centaurea nigra</i>	Common Knapweed	O	<i>Centaureum erythraea</i>	Common Centaury
O	<i>Cerastium fontanum</i>	Common Mouse-ear	R	<i>Cerastium glomeratum</i>	Sticky Mouse-ear
O	<i>Cerastium semidecandrum</i>	Little Mouse-ear	F	<i>Chamerion angustifolium</i>	Rosebay Willowherb
O	<i>Cirsium arvense</i>	Creeping Thistle	R	<i>Cirsium palustre</i>	Marsh Thistle
O	<i>Cirsium vulgare</i>	Spear Thistle	L	<i>Cytisus scoparius</i>	Broom
L	<i>Dactylis glomerata</i>	Cock's-foot	L	<i>Deschampsia cespitosa</i>	Tufted Hair-grass
L	<i>Deschampsia flexuosa</i>	Wavy Hair-grass	F	<i>Digitalis purpurea</i>	Foxglove
R	<i>Dryopteris affinis ssp.borreri</i>	Scaly Male-fern	O	<i>Dryopteris dilatata</i>	Broad Buckler-fern
L	<i>Dryopteris filix-mas</i>	Male-fern	R	<i>Epilobium hirsutum</i>	Great Willowherb
O	<i>Epilobium montanum</i>	Broad-leaved Willowherb	L	<i>Festuca ovina</i>	Sheep's-fescue
F	<i>Festuca rubra</i>	Red Fescue	L	<i>Filago vulgaris</i>	Common Cudweed
F	<i>Fraxinus excelsior</i>	Ash	O	<i>Galium aparine</i>	Cleavers
L	<i>Galium saxatile</i>	Heath Bedstraw	F	<i>Glechoma hederacea</i>	Ground-ivy
O	<i>Heracleum sphondylium</i>	Hogweed	F	<i>Hieracium vulgatum</i>	Common Hawkweed
O	<i>Holcus lanatus</i>	Yorkshire-fog	O	<i>Hyacinthoides</i>	Bluebell

Fr.	Scientific Name	Common Name	Fr.	Scientific Name	Common Name
L	<i>Hypericum pulchrum</i>	Slender St John's-wort	F	<i>non-scripta</i> <i>Hypochaeris radicata</i>	Cat's-ear
L	<i>Juncus effusus</i>	Soft-rush	R	<i>Juncus inflexus</i>	Hard Rush
L	<i>Lamium album</i>	White Dead-nettle	R	<i>Lamium purpureum</i>	Red Dead-nettle
L	<i>Lapsana communis</i>	Nipplewort	O	<i>Larix sp.</i>	Larch
F	<i>Leontodon autumnalis</i>	Autumn Hawkbit	O	<i>Lolium perenne</i>	Perennial Rye-grass
L	<i>Lonicera periclymenum</i>	Honeysuckle	F	<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
L	<i>Luzula campestris</i>	Field Wood-rush	L	<i>Medicago lupulina</i>	Black Medick
O	<i>Mercurialis perennis</i>	Dog's Mercury	O	<i>Myosotis arvensis</i>	Field Forget-me-not
O	<i>Myosotis discolor</i>	Changing Forget-me-not	R	<i>Narcissus sp.</i>	Daffodil species
L	<i>Oxalis acetosella</i>	Wood-sorrel	O	<i>Pilosella officinarum</i>	Mouse-ear-hawkweed
O	<i>Plantago lanceolata</i>	Ribwort Plantain	O	<i>Plantago major</i>	Greater Plantain
F	<i>Poa annua</i>	Annual Meadow Grass	O	<i>Poa pratensis</i>	Smooth Meadow-grass
O	<i>Poa trivialis</i>	Rough Meadow-grass	R	<i>Potentilla sterilis</i>	Barren Strawberry
F	<i>Prunella vulgaris</i>	Selfheal	O	<i>Pteridium aquilinum</i>	Bracken
L	<i>Quercus hybrid.</i>	Oak hybrid	O	<i>Quercus robur</i>	Pedunculate Oak
O	<i>Ranunculus repens</i>	Creeping Buttercup	R	<i>Ribes rubrum</i>	Red Currant
R	<i>Ribes uva-crispa</i>	Gooseberry	O	<i>Rosa caesia</i> <i>ssp.glauca</i>	Glaucous Dog-rose
O	<i>Rosa canina</i>	Dog-rose	O	<i>Rubus fruticosus</i> <i>agg.</i>	Bramble
O	<i>Rumex acetosa</i>	Common Sorrel	O	<i>Rumex acetosella</i>	Sheep's Sorrel
O	<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<i>Sagina procumbens</i>	Procumbent Pearlwort
O	<i>Salix caprea</i>	Goat Willow	O	<i>Sambucus nigra</i>	Elder
R	<i>Scrophularia nodosa</i>	Common Figwort	F	<i>Senecio jacobaea</i>	Common Ragwort
L	<i>Senecio squalidus</i>	Oxford Ragwort	O	<i>Senecio sylvaticus</i>	Heath Groundsel

Fr.	Scientific Name	Common Name	Fr	Scientific Name	Common Name
L	<i>Senecio vulgaris</i>	Groundsel	O	<i>Silene dioica</i>	Red Campion
R	<i>Sonchus asper</i>	Prickly Sow-thistle	R	<i>Stachys sylvatica</i>	Hedge Woundwort
O	<i>Stellaria holostea</i>	Greater Stitchwort	F	<i>Stellaria media</i>	Common Chickweed
A	<i>Teucrium scorodonia</i>	Wood Sage	L	<i>Trifolium dubium</i>	Lesser Yellow Trefoil
O	<i>Trifolium repens</i>	White Clover	R	<i>Trifolium striatum</i>	Knotted Clover
L	<i>Tussilago farfara</i>	Colt's-foot	F	<i>Ulex europaeus</i>	Gorse
O	<i>Urtica dioica</i>	Common Nettle	L	<i>Veronica arvensis</i>	Wall Speedwell
L	<i>Veronica chamaedrys</i>	Germander Speedwell	L	<i>Veronica officinalis</i>	Heath Speedwell
L	<i>Veronica persica</i>	Common Field-speedwell	O	<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell
O	<i>Vicia sativa ssp.nigra</i>	Common Vetch	R	<i>Vicia sepium</i>	Bush Vetch
L	<i>Vulpia bromoides</i>	Squirreltail Fescue			

### Field Meetings 1996

Please note that meetings marked \* are specifically for recording flora and fauna in a particular area and there may be no sustained walk. All members are welcome to contribute their enthusiasm and expertise! Members are asked to report finds or records to the Secretary, who has a list of specialist consultant members who will be pleased to help with the identification of specimens. A security guard will be with the parked cars. The charge by the Club will be 50 pence per person.

Date	Time	Area of Walk	Leader	Meeting Place
Sat. April 20th	11.00am	Ravenscar, Beast Cliff	Eric Gendle	Ravenscar, lay by
Wed. May 8th	7.00pm	Flatts Lane & Old Brick Works	Tony Wardhaugh	Near Ormesby Bank
Sun. May 12th	2.00pm	Hardwick Park	Ian Lawrence	The Hall car park
Sun. May 19th	1.30pm	Whitecliffe Wood, Skinninggrove	Pat Wood	Museum car park
Wed. May 22nd	7.00pm	Riverside	Maurice Hallam	Middleton One

Sat. June 1st	2.00pm	Circular Walk Kildale Woods	Maurice Ward	Row Verge at village entrance
Wed. June 5th	7.00pm	Egglescliffe Circular	Neil Baker	Near Egglescliffe Church
Wed. June 12th	7.00pm	Oakdale, Osmotherly	Pam Law	Black Hambleton Corner
Sun. June 16th	11.00am	Gaitbarrow National Nature Reserve	Vincent Jones	See notes
Sat. June 22nd	11.00am	Muker, Kisdon & Keld	Joan Bradbury	Muker car park
Wed. June 26th	7.00pm	Sandy Flatts and area *	Ian Lawrence	Botanic Centre □
Sun. June 30th	11.00a.m	Thrislington National Nature Reserve	Vincent Jones	At the Reserve
Wed. July 3rd	7.00pm.	Marton West Beck *	Ian Lawrence	Slip Inn car park □
Sat. July 6th	10.30am.	YNU, Yearsley Moor nr Ampleforth	John Blackburn	See notes
Wed. July 10th	7.00pm	Waste land nr. South Bank Station	Ian Lawrence	On the road to the station □
Wed. July 17th	7.0pm	Aislaby near Yarm	Rob Scaife	Park at Manor Farm
Sat. July 20th	11.00am	Barnard Castle to Cotherstone	Colin Chatto	Near Barnard Castle Church
Sun July 28th	11.00am	Wrelton area	Eric Gendle	In Wrelton village
Sat. Aug. 3rd	11.00am	Rosedale	Alec Hunter	Rosedale Church
Sun. Aug. 18th	11.00am	Blakey Topping	Malcolm Birtle	Hole of Horcum car park
Sun. Sep. 1st	11.00am	Roxby High Moor & Lealholm Moor	Darroll Fryer	Scaling Reservoir car park
Sat. Sep. 21st	11.00am	Sinnington area	Pam Law	Sinnington village
Sat. Sep. 28th	2.00pm	Darlington Cemetery	Ian Lawrence	Carmel Road entrance
Sat. Oct. 12th	2.00pm	Gills to east of the Hawnbly road	Norman Thompson	B1257 near Hawnbly road end

## NNU Meetings

Details from M.Birtle (01642 558055)

18 May	Weardale	15th June	Middleton Hall, Belford, Nick Cook
6th July	Bishop Middleham, Cliff Evans	21st September	Briarwood Banks, Ian Douglas