

# CLEVELAND NATURALISTS'

## FIELD CLUB



### RECORD OF PROCEEDINGS

**Volume 10 Part 4**

**Spring 2014**

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## THE OFFICERS & COMMITTEE 2014-2015

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Secretary.	Eric Gendle, 13 Mayfield Road, Nunthorpe, TS7 0ED.
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Membership Secretary.	Jo Scott, Tethers End, Hartburn Village, Stockton. TS18 5DR.
Programme Secretary.	Neil Baker, 9 Glaisdale Court, Darlington, DL3 7AD.

The immediate past president. Vic Fairbrother.

Ordinary members. Ian Lawrence, David Barlow, Paul Forster, Jean McLean.

### Membership Details

The Club seeks to promote an interest in all branches of natural history and to assist members in finding out about the living things that they see in the countryside around them. The present membership includes those who have particular interests in birds, insects, slugs and snails, lichens, fungi, flowering plants and mosses and liverworts. Members with interests in other fields would be very welcome.

In spring and summer there are evening, half-day and whole-day visits to investigate the natural history of a particular area. During the winter months there is a series of meetings held in the Nunthorpe Institute, The Avenue, Nunthorpe, Middlesbrough. If you have any difficulty getting to this venue, please speak to any committee member and we will see if we can arrange a lift for you. A meeting usually takes the form of a lecture given by a club member or visiting speaker. The annual subscription is £8.

Members are entitled to attend meetings of two affiliated organisations:

Yorkshire Naturalists' Union.

Tees Valley Wildlife Trust.

Details are available from Eric Gendle ☎ 01642 281235

## **President's Address: 17th March 2014.**

*Vic. Fairbrother.*

I am pleased to report on another excellent year of activity exploring the natural history of Cleveland and the surrounding countryside.

The thirty three field trips organised in 2013 provided some memorable records and experiences which will be described in more detail in the Annual Record of Proceedings and on the club website.

Members enjoyed five evening events exploring Portrack Marsh, Black Bobbies Field, Maze Park, Billingham Beck and finally Mill Bank Wood where we searched for molluscs. There were also afternoon meetings at Fairy Dell and Cowpen Bewley.

Local day visits included a walk from Marske to Saltburn returning along the beach and later another day linked to the Big Sea Survey, exploring rock pools at Saltburn.

In County Durham we visited Hurworth Burn, Witton Park, Hart Station, Cox Green, Cockfield and Thrislington Quarry where we had a talk on magnesian limestone followed by fossil hunting in the quarry.

The North York Moors prompted visits to Mulgrave Woods, Spaunton Quarry, Pickering, May Beck, Reasty Bank, and a botanical ramble from Ashberry Farm. The joint meeting with the YNU centred on May Moss and Langdale Forest.

In the Yorkshire Dales we visited Muker, Kisdon and Semer Water. Further afield we visited Druridge Pools in Northumberland and continuing our links with Yorkshire Dragonfly Society we enjoyed two joint meetings at Broomfleet Washlands and Fox Covert, Catterick Garrison.

The weather was frustratingly unhelpful on a number of occasions but only the visit to Troutdale had to be cancelled and one moth trapping event was postponed. Late evening moth trapping provided some fascinating records both at the Priory Gardens, Guisborough and on our privileged return to the extensive Mulgrave Castle Gardens.

Two of our autumn indoor meetings were the result of the weather disrupting last year's programme. The wait was worthwhile though and we learnt much from Katherine Lart about the work of Plantlife and Graeme Skinner's passion for British Herpetofauna won over even the most hesitant in the audience. It is always a delight to share Vincent Jones' love of our British flora and his reflections on rare and common plants at a wide variety of sites in Britain contrasted nicely with the exotic flowers of Western Australia presented by intrepid traveller Judy Dinwiddie. Ruth and Peter Waterton reprised their unique double act by revealing some of the diverse wonders of North East Anatolia. The changing fortunes of butterflies in varying habitats across North Yorkshire and Teesside were beautifully illustrated by Dave Wainwright.

We could not possibly cope with the challenges of the final week before Christmas until Joan Bradbury ably assisted by Norma Pagdin had given our little grey cells a thorough workout at our annual social evening which as always was a most enjoyable occasion.

On Members' Night, Amy Carrick from Tees Valley Wildlife Trust recruited some volunteers to take part in a Water Vole Survey and distributed information packs. This was followed by presentations by Tony Wardhaugh on Slugs, Mark Stokeld on the Burren and Eric Gendle on the Grand Canyon. The exhibition of geological specimens, lichens, paintings and photographs provided by Andrew Ferguson, Paul Forster, Alan Simkins, Jo Scott, David Smith and Peter Waterton was particularly impressive this year.

Following the AGM Eric Gendle gave a talk on the Canadian Rockies and the indoor programme will conclude on 31st March with Natural History Highlights of 2013 presented by Paul Forster.

The latest edition of our annual Record of Proceedings is nearing completion and will soon be available on the website. Each year sees further advancement as digital production enables increased use of colour and the inclusion of more extended articles. Printed copies of a shortened version will again be available on request for a small charge.

It was very satisfying to play a supporting role in the successful local RIGS group project on the fossil plant flora of Marske Quarry and an indication of the quality of that contribution can be seen in David Smith's article on palaeobotany in the next issue of our Annual Proceedings.

We were invited to join Whitby Naturalists' centenary celebrations this year and Dorothy & Norman Thompson represented the club at their centenary lunch and Eric Gendle and I attended the centenary symposium. The centenary exhibition was devoted to fungi and Paul Forster's exciting find of *Onygena equina* growing on a spectacular ram's horn found a prominent place in the exhibition and was also featured on the exhibition poster.

Many people have contributed to the success of the club in the past year including those members who have planned and led field trips and those who have given talks at indoor meetings. I would like to thank all members for your support again this year and for the friendly welcoming atmosphere you help to create.

A programme of over 45 events involved a lot of work for Eric Gendle, Secretary; Colin Chatto, Treasurer; Neil Baker, Programme Secretary; Jo Scott, Membership Secretary; Malcolm Birtle, Editor of Record of Proceedings; David Barlow, who manages our increasingly important website, Paul Forster our digital projector operator and fellow committee members Vincent Jones, Ian Lawrence and Jean McLean. Our Past President, Dorothy Thompson, has continued to host our committee meetings in her own inimitable style.

I would like to thank them all for their support during the past year, and I would ask you to show your appreciation of all their efforts on our behalf.

## **Reflections of a President.**

*Vic Fairbrother.*

I was surprised when asked if I would accept nomination as President and I asked for time to think about it as I was not even a member of the committee at the time. When I accepted I assumed it might be for a couple of years. Since then the committee members have always been extremely encouraging and supportive, repeatedly resisting my regular suggestions that it was time for a change. That time has now come.

I would like to say a huge thank you. I have thoroughly enjoyed my time as President, even though often it has been harder work than it might seem, and it has been a privilege to serve the club in this way.

We all respond to our club in different ways but as some of you will have noticed I have felt particularly attuned to the long and absorbing history of our field club which reaches back to 4<sup>th</sup> April 1881. From time to time I have looked for opportunities to make links back to the work of our predecessors which is so wonderfully recorded and preserved in our rich archive of annual record of proceedings. Some of our winter lectures and the Elgee memorial lectures we have organised have provided a number of such opportunities and of course the recent TVRIGS group Marske Quarry project was a classic example of people building on the work of club members over 100 years ago.

I am encouraged by the contribution that the club is currently making to ensure that this rich stream of records is maintained both through our annual record of proceedings and the records members provide to regional and national recording groups. The botanical recording led for many years by Ian Lawrence and continued now by Vincent Jones as BSBI recorder for VC62 is ensuring that an excellent foundation is being established as we prepare for the task of monitoring the anticipated impact of climate change. Very soon too we expect to see the publication of Vincent's book on the hawkweeds of Yorkshire. Similarly our members recording of butterflies, moths, dragonflies, molluscs and fungi continue at a level which is significant locally but also regionally. In ornithology my role as joint editor of the Breeding Birds of Cleveland has helped the Teesmouth Bird Club to establish a benchmark against which the changing fortunes of our local bird populations can be monitored.

The number of links we have forged with other organisations will also be helpful in taking the work of the field club forward under the guidance of our new President. One of the saddest events during my Presidency was the closure of Natures' World and the consequent break up of the Wildflower Ark which had led so much fieldwork for the Tees Valley Wildlife Trust including for example the surveying of hedgerows and lost meadows throughout Cleveland. We still have good links with the Wildlife Trust and will be contributing to the water vole survey later this year. In addition to the annual joint meeting with the Yorkshire Naturalists' Union we now have regular joint meetings with the Yorkshire Dragonfly Society and the Tees Valley RIGS Group. This year too we have arranged a joint meeting with Yorkshire Branch of Butterfly Conservation which I hope will become a regular feature. Some time ago an ad hoc group of enthusiasts grew to become a formal sub-group of the North East Fungus Study Group under the leadership of Alan Bunn. Although not part of CNFC all the members are Cleveland Naturalist Field Club members.

The flowers and birds of our wonderful coast are quite well documented so it is particularly pleasing to be able to report that our other maritime recording has improved recently inspired by Jo Scott and her involvement with the Big Sea Survey, but there still remains much to do.

I am constantly in awe of the knowledge, expertise and creative talents of our members, all things which they are so willing to share. I have never belonged to a more friendly welcoming society and the number and quality of friendships seems to increase every year. Much of this comes from the example created by my predecessors and continued so effectively by you the members.

Thank you all. We have much to look forward to in the coming year as Dr Malcolm Birtle begins to preside over a new chapter in the history of the Cleveland Naturalists' Field Club.

## Highlights of 2013 Field Meetings

### Sunday, 14th April, 10:30 am, leader Colin Chatto GR NZ410332. Hurworth Burn.

On probably the warmest day since mid September, thirteen of us set off from the car park along the disused railway line which runs past Hurworth Burn Reservoir. There were lots of birds on and around the reservoir and on our walk we saw or heard Swallow, Willow Warbler, Greylag, Canada Goose, Cormorant, Mallard, Tufted Duck, Goldeneye, Garganey, Great Crested Grebe, Wigeon, Curlew, Lapwing, Woodcock, Pheasant, Great Spotted Woodpecker, and later, a flock of about 60 Redwing.

*Tussilago farfara* (Coltsfoot) was in flower and we saw a water beetle (unidentified) in the ditch. Also in the ditch was a number of *Velia caprai* (Water Crickets). These are water bugs, not crickets, but do resemble them, very slightly.

It rained quite heavily after lunch so six members decided to leave the walk. In Roper's Wood there were two ponds but as the weather was poor we didn't linger. We did, however, see a number of *Capreolus capreolus* (Roe Deer).

### Saturday, 27th April, 10:30 am, leader Andy Ferguson GR NZ862125. Mulgrave Woods.

The day was sunny, with wind and threatening rain. Heavy rain and hail fell on the journey to Sandsend. Spring flowers were well represented by *Lathraea squamaria* (Toothwort), *Viola reichenbachiana* (Early Violet), and *Viola riviniana* (Dog Violet). A few birds were evident notably Nuthatch, Greater Spotted Woodpecker, and Grey Wagtail. *Daldinia concentrica* (King Alfreds Cakes), and *Hypoxolon fragiforme* (Beech Woodwort) were growing on fallen timber. Flowering *Petasites japonicus* (Giant Butterbur/ Sweet Coltsfoot) led to much admiration and discussion. *Discus rotundatus*, and *Cepaea nemoralis* were the only molluscs seen.

### Wednesday, 1st May, 10:30 am, leader Malcolm Birtle GR NZ174302. Witton Park.



The day was sunny, bright, warm with a cool breeze. The party walked down to the Wear along the east side of the railway, and then walked downstream on the south bank. The birds noted were Jay, Great Spotted Woodpecker, Grey Wagtail and Blackcap. Some trees were coated with the orange alga *Trentepohlia abietina*. *Adoxa moschatellina* (Moschatel), and *Arum maculatum* (Wild Arum) were growing well. *Aglais io* (Peacock), *Aglais urticae* l (Small



Tortoiseshel), *Pieris napi* (Green Veined White), and *Bombylius major* (Beeflies) were active. The party walked on to Escomb to admire the Saxon church, and then back down to the river noting *Andrena fulva*

(Tawny Mining Bee), Copse Snail (*Arianta arbustorum*), *Anemone nemorosa* (Wood Anemone), Reed Bunting, Goosanders resting on shingle, and Sand Martins. At this point the party were astonished to see an Osprey being mobbed by corvids as it attempted to hunt in the river.

**Saturday, 4th May, 10:30 am, leader Colin Chatto GR NZ640226. Marske and Saltburn.**

We walked from St. Germain's Church in Marske-by-the-Sea along the path alongside the railway line to Valley Gardens at Saltburn and then back along the beach / foreshore to Marske. On the way round we encountered Bullfinch, Swallow, Whitethroat, Oystercatcher, Skylark, Meadow Pipit and Sand Martins. Insects noted were *Bombylius major* (Bee-fly), the hoverfly *Eristalis nemorum*, and *Nomada*, possibly *flava*, a species of cuckoo bee which parasitises nests of *Andrena* species of bees which were also seen.

The most notable aspect of our walk however was the large number of dead sea birds along just one mile of beach. There were over 60 Puffins together with guillimots, Razorbills and cormorants together with a long dead *Phocoena phocoena* (Harbour or Common Porpoise).

**Saturday, 18th May, 10:30 am, leaders Peter and Ruth Waterton GR SE915868. Troutdale Moor area.**

Cancelled due to weather.

**Wednesday, 22nd May, 1:30pm, leader Martin Allen GR NZ512146. Fairy Dell.**

**Sunday, 26th May, 10:30 am, leader Paul Forster GR NZ278960. Druridge Pools.**

**Wednesday, 29th May, 10:30 am, leader Vic Fairbrother GR SE725872. Spaunton Quarry.**

A few hardy members ignored the depressing weather forecast and were able to explore the site until just after mid-day when the heavy rain eventually arrived. The chill and overcast conditions meant that the hoped for butterflies were not active but we were able to enjoy some of the botanical interest in the area. There were some fine examples of *Orchis mascula* (Early Purple Orchid), but the star of the morning was undoubtedly the *Ophrys insectifera* (Fly Orchid). Notoriety means that *Atropa belladonna* (Deadly Nightshade) is always likely to receive special attention but this is also a southern plant and locally quite rare. It was also interesting to examine the *Primula x polyantha* (False Oxlip) alongside the expected bright clumps of *Primula vulgaris* (Primrose) and *Primula veris* (Cowslip). It would be very rewarding to return to this site in more favourable conditions.

**Sunday, 2nd June, 10:30 am, leader Peter Waterton, K.Gittens BDS GR SE866282. Broomfleet Washlands, near Hull. (Joint Meeting with Yorkshire Branch of British Dragonfly Society.)**

On a fine sunny day the two groups eventually met up;(There was some confusion about starting point!). The main aim of the meeting was to see Odonata, especially *Coenagrion pulchellum* (Variable Damselfly) and *Brachytron pratense* (Hairy Hawker). We were successful in that there were numerous of the former and 4 of the latter, the earliest of the hawkers on the wing. Other Odonata seen were *Erythroma najas* (Red-eyed Damselfly), *Enallagma cyathigerum* (Common Blue Damselfly), *Ischnura elegans* (Blue-tailed Damselfly), and a teneral *Libellula quadrimaculata* (Four-spotted Chaser). Lepidoptera recorded were; *Goneperyx rhamni* (Brimstone), *Inachis io* (Peacock), *Anthocaris cardamines* (Orange Tip), *Pieris napi* (Green-veined White), *Cabera pusaria* (Common White Wave), *Euclidia glyphica* (Burnet Companion), *Tyria jacobaeae* (Cinnabar),and *Epirrhoe alternata* (Common Carpet). The birds did not dissappoint either with *Circus aeruginosus* (Marsh Harrier) (4), *Falco subbuteo* (Hobby) (1), *Buteo buteo* (Common Buzzard) (4), *Accipter nisus* (Sparrowhawk) (1),and *Cettia cetti* (Cettis Warbler) (4). Botanical interests were not really catered for but a nice group of *Dactylorhiza incarnata* ( spp unknown) (Early Marsh Orchid) was noted.



**Wednesday, 5th June, 10:30 am, leader Eric Gendle GR SD911978. Kisdon. Swaledale**

A party of 7 enjoyed a varied walk around Kisdon. After spotting the garden throw out *Tellima grandiflora* (Fringe Cups) by the river the party climbed steadily to the high level contour path through limestone grassland and scree. The late spring was reflected in the abundance of *Hyacinthoides non-scripta* (Bluebell), especially prominent in the valley below, and of *Primula vulgaris* (Primrose). Only six *Orchis mascula* (Early Purple Orchids) were spotted, much fewer than expected. *Saxifraga granulata* (Meadow Saxifrage), *Minuartia verna* (Spring Sandwort), *Geranium lucidum* (Shining Cranesbill) and Dovesfoot Cranesbill (*Geranium molle*), *Pentaglottis sempervirens* (Green Alkanet), *Allium schoenoprasum* (Chives), *Thymus vulgaris* (Thyme), *Oxalis acetosella* (Wood Sorrel), *Asplenium trichomanes* (Maiden Hair Spleenwort), *Asplenium scolopendrium* (Hart's tongue), *Mercurialis perennis* (Dogs Mercury), *Viola reichenbachiana* (Early Violet), *Viola riviniana* (Dog Violet), *Fragaria vesca* (Wild Strawberry), *Polypodium vulgare* (Polypody), *Geum rivale* (Water Avens), *Cruciata laevipes* (Crosswort), *Arum maculatum* (Wild Arum), *Cardamine pratensis* (Ladies Smock), *Pedicularis sylvatica* (Lousewort) and *Lysimachia nemorum* (Yellow Pimpernel) were also recorded. One or more *Buteo buteo* (Buzzards) flew above and below the path. *Callophrys rubi* (Green Hairstreaks) were photographed and a *Scotopteryx chenopodiata* (Shaded Broad Bar) moth identified. The party returned over the top of Kisdon where *Cochlearia officinalis* (Common Scurvy Grass) was visible in flower, as were *Viola lutea* (Mountain Pansy) in yellow, purple and variegated forms. Occasional *Calocybe gambosa* (St George's Mushrooms) grew in the grassland as the group descended into Muker. *Salmo trutta* (Brown Trout) were seen in the river. Wheatear were flitting about with Oystercatcher and Curlew calling in the meadows near the river. A dead Woodcock was found. Golden Plover and Lapwing were amongst the fields on the summit with *Aglais urticae* (Small Tortoiseshell).

**Sunday, 9th June, 10:30 am, leader Vincent Jones GR SE571844. Ashberry.**

The day was dull, cool, and overcast with the prospect of getting warmer. *Dactylorhiza incarnata* (Early Marsh orchid), *Primula farinosa* (Birds-eye Primrose) and *Pinguicula vulgaris* (Butterwort) were in flower, with *Pedicularis palustris* (Marsh Lousewort), and *Eriophorum latifolium* (Broad-leaved Cottongrass). At the top of the bank on the road to Cold Kirby. The hoverflies *Volucella bombylans* and *Rhingia campestris* were on the wing. At the entrance to Tylas Farm (former site of *Paris quadrifolia* (Herb Paris) the Carabid *Nebria brevicollis* and Baneberry (*Actaea spicata*) were found. In the valley meadows *Triglochin palustris* (Marsh Arrowgrass) was growing, *Pararge aegeria* (Speckled Wood) flying, and Green Woodpecker calling. A Grey Heron flew past.

Nineteen mollusc species were recorded, three of which are of note. *Pomatias elegans* (the Round-mouthed Snail) is one of only two British species of terrestrial prosobranch snail i.e. ones which have an operculum to close off the shell mouth when the animal withdraws (See figure). It inhabits areas with deep friable calcareous soil, into which it burrows. The Ashberry Hill area is one of its two most northerly known localities in Britain, the other being Forge Valley near Scarborough. During this visit it was found close to the roadside at the edge of Lambert Hag Wood (SE566856). Very nearby, on a derelict stone wall, numerous *Pyramidula pusilla* (Rock Snails) were located; a species which is uncommon in VC62. *Spermodea lamellata* (the Plated Snail) is strongly associated with ancient semi-natural woodland in Britain; one individual was found beneath a fallen stick at the edge of Ashberry Wood (SE569851).



*Pomatias elegans* (Round-mouthed Snail) showing the operculum.

**Wednesday, 12th June, 1:30pm, leader Daphne Aplin GR NZ479254. Cowpen Bewley Woodland Park.**

A Grasshopper Warbler was calling adjacent to Pigeon Wood. *Pyrochroa serraticornis* (Red Headed Cardinal Beetle), *Nemophora degeerella* (Yellow-barred Long-horn), and *Leucoma salicis* (White Satin) larva were also noted. White Satin is a relatively recent arrival in Co. Durham with a few scattered records. The existence of a larva indicates breeding. A larva was found on a field outing to Preston Park in 200?



*Leucoma salicis* (White Satin) larva



*Nemophora degeerella* (Yellow-barred Long-horn),

**Sunday, 16th June, 10:30 am, leader Colin Chatto GR SE798836. Pickering.**

On a warm, dry and mainly sunny day, nine members walked from Pickering to Yatts Farm and back. At the beginning of the walk we were shown a number of fossils in Lowther Wood by Malcolm Birtle. When we got to Wailes Hagg Wood we had to wait until we could pass the rifle range which was in use. There were lots of *Aquilegia vulgaris* (Columbine) along one of the paths and *Viola arvensis* (Field Pansy) in one of the fields. At the end of the wood, where I'd planned to return, it was decided to continue to Yatts Farm where Eric Gendle said he'd seen a variety of orchid species very recently. After consulting the map, we found a good route down into the dale. There we saw good specimens of orchids - *Platanthera chlorantha* (Greater Butterfly), *Ophrys insectifera* (Fly), *Orchis ustulata* (Burnt Tip) and *O. mascula* (Early Purple).

A bird was singing in a tree which a couple of us thought was a Blackcap. When seen, it turned out to be a Garden Warbler. I thought it was just me who couldn't tell their songs apart! Now for the insects. We saw some *Gonepteryx rhamni* (Brimstone) butterflies and *Zygaena filipendulae* (Six-Spot Burnet) moths. I noticed two hoverflies, both the same species, *Volucella bombylans*, but one was the red tailed variety (mimicking the bumble bee *Bombus lapidarius*), and the other, variety *plumata* had a white tail (mimicking *Bombus lucorum*).

A few days earlier, when planning the walk, I came across two *Bombylius major* (Bee-flies), flying in copula (in tandem) - a strange sight!

**Wednesday, 19th June, 10:30 am, leader Jo Scott GR NZ308327. Thrislington Quarry and National Nature Reserve**

The magnesian limestone which stretches from Nottingham northwards to Yorkshire, Durham and the Tyne was formed by sedimentary processes during the Permian 240 million year ago. Beneath the magnesian limestone and sandwiched between it and the yellow sands lies a bed of Marl Slate; a deposit of the Zechstein Sea it is internationally known for containing well preserved fossils of vertebrates especially fish.



*Palaeoniscus macrophthalmus*

In 2010 the Heritage Lottery Fund confirmed that a grant for a project to help conserve the Durham Magnesian Limestone Plateaux was granted. The Limestone Landscape Partnership now works in partnership with local businesses, groups and individuals to increase understanding and support for this valuable landscape and many projects have been established with schools and local groups in the area.

Several workshops, lectures and quarry visits have been organised by the Limestone Landscape Partnership and 17 members of the Cleveland Naturalists' Field Club joined one of these events, lead by Ken Bradshaw to visit Thrislington Quarry in County Durham

in search of fossils in the Marl Slate.

Following a lecture in the morning which described the geological formations and the work of the Landscape Limestone Partnership we spent some time in a specially designated bay within the quarry where Marl Slate spoil is dumped. This is a safe area away from the working quarry where the sound of hammers smashing open blocks of slate can be heard in the hope of finding something special. Several fossil specimens were found including the fish *Palaeoniscus macrophthalmus*, *Palaeoniscus frieselebenensis* and an example of fossilised bark.



*Palaeoniscus frieselebenensis* (Photo PW Forster)

Later in the afternoon we visited Thrislington National Nature Reserve which was developed on an area of calcareous grassland rescued when the Lefarge quarry expanded in the 1980's. As well as the more typical calcareous grassland plants we noted *Antennaria dioica* (Mountain Everlasting), *Dactylorhiza fuchsii* (Common Spotted Orchid) and *Dactylorhiza purpurella* (Northern Marsh

Orchid), *Linum perenne* (Perennial Flax), and *Rosa pimpinellifolia*

(Burnet Rose). A highlight of the visit was to see (*Aricia artaxerxes salmacis*) the Northern Brown Argus butterfly.



*Linum perenne* (Perennial Flax )



*Rosa pimpinellifolia* (Burnet Rose)



*Aricia artaxerxes salmacis* (Northern Brown Argus)

Just seven species of molluscs were recorded (see table below), a consequence in part of very dry weather. However, this area does not appear to be as rich in mollusc species as the nearby Bishop Middleham quarry reserve.

**Wednesday, 26th June, 6:30 pm, leader Eric Gendle GR NZ462193. Portrack Marsh**

A pleasant evening walk was very well attended. As a change from the usual river bank walk, the members enjoyed a gentle walk into the main part of the reserve. Nothing of exceptional interest was noted, the cold spring appeared to have delayed much of the flora. The hoped for *Ophrys apifera* Bee orchids could not be found but *Dactylorhiza purpurella* and *Dactylorhiza fuchsii*, Northern Marsh and Common Spotted Orchids were easily found.

**Friday, 28th June, 8.30pm, leader Paul Forster GR NZ844126. Mulgrave Castle Walled Garden.**

**Wednesday, 3rd July, 10:30 am, leader Neil Baker GR NZ483363. Hart Station.**

**Wednesday, 10th July, 6:30 pm, leader Dave Barlow GR NZ452167. Black Bobbies Field, Thornaby.**

**Sunday, 14th July, 10:30 am, leader Andy Astbury GR NZ892025. May Beck and Falling Foss.**

**Wednesday, 17th July, 10:30 am, leader Malcolm Birtle GR NZ327552. Cox Green.**

The party met on a hot sunny day to walk up to Penschaw Monument. Here, the following were of interest- *Aphantopus hyperantus* (Ringlet), *Maniola jurtina* (Meadow Brown), *Pararge aegeria* (Speckled Wood), *Polygonia c-album* (Comma), *Thymelicus sylvestris* (Small Skipper), *Aglais urticae* (Small Tortoiseshell), *Polyommatus icarus* (Common Blue), *Aglais io* larvae (Peacock), *Coenonympha pamphilus* (Small Heath), *Odezia atrata* (Chimney Sweep), *Zygaena filipendulae* (6-Spot Burnet), *Plantago media* (Lambs Tongue), *Dactylorhiza fuchsii* (Spotted Orchid), *Campanula rotundifolia* (Harebell), *Linum catharticum* (Fairy Flax), *Tragopogon pratensis* (Goatsbeard), *Galium verum* (Lady's Bedstraw) and *Briza media* (Quaking Grass).

**Sunday, 21st July, 10:30 am, leader Neil Baker GR SD934902. Semer Water.**

On a very cool morning members met on Bainbridge village green and walked to Stalling Busk and back. The odd Swift and Hedge Sparrow were about and *Lycium barbarum* agg. (Duke of Argylls Tea Plant) was found next to the road bridge. Greylag, Oystercatcher, and Kestrel were watched as we strode the meadows. Next to the stream that flows from Semerwater we observed *Nuphar lutea* (Yellow Water Lily), *Achillea ptarmica* (Sneezewort), *Campanula latifolia* (Bellflower), *Senecio aquaticus* (Marsh Ragwort), *Calopteryx splendens* (Banded Demoiselle), and *Odezia atrata* (Chimney Sweep). Young Waterhen, Shelduck, Tufted Duck and Peewit were on Semerwater. At and around Stalling Busk Church we found *Maniola jurtina* (Meadow Brown), *Aphantopus hyperantus* (Ringlet), *Bombus pascuorum* (Common Carder Bee) and Grasshopper Warbler. The distinctive lichens *Lecanora ruficola* and *Verrucaria macrostoma* were found on walls. As we walked back to the bridge we saw *Aglais urticae* (Small Tortoiseshell).

**Wednesday, 24th July, 6:30 pm, leader Ian Lawrence GR NZ463189. Maze Park.**

The evening was warm, humid, cloudy, and threatening thunder. On a mound north of the marshalling yards, west of barrage *Maniola jurtina* (Meadow Brown), *Coenonympha pamphilus* (Small Heath), *Clematis vitalba* (Wild Clematis), *Conopodium majus* (Pignut), *Daucus carota* (Wild Carrot), *Pastinaca sativa* (Wild Parsnip) were noted. Grey Partridge were calling and *Tyria jacobaeae* larvae (Cinnabar) were on *Senecio* sp (Ragwort). Walking to the riverside on the south side, east of the barrage downstream *Scotopteryx chenopodiata* (Shaded Broad Bar) and *Udea lutealis* were fluttering amongst the grass. *Arrhenatherum elatius* (False Oat Grass) formed burnt heads crowding the grassland. A Grey Seal was cruising around in the river. On the top of the large mounds between the river and the marshalling yards *Ononis repens* (Restharrow) and *Carlina vulgaris* (Carline Thistle) were growing. A Grasshopper Warbler could be heard calling from Portrack Marsh on the opposite river bank. A flock of flying ants became a bit of a nuisance.

All mollusc species recorded on this visit were from NZ4619. *Myosotella myosotis*, the Mouse-eared Snail (see figure), occurred in considerable numbers beneath limestone ballast on the river bank (NZ461195). The scientific name of this species has undergone a number of revisions. At one time known as *Phytia myosotis*, it became *Ovatella myosotis*. The latter was then found to include two similar species which were named *O. myosotis* and *O. denticulata*. Recently their generic name has been altered to *Myosotella*. The finding of *M. myosotis sensu stricto* during this visit is of interest because the distribution of the two segregates is poorly known at present. *M. myosotis s.s.* is a species of estuarine habitats whereas the recently segregated *M. denticulata* seems to be a snail of fully marine coastal

sites. *M. myosotis* agg. was known in the Middlesbrough area as long ago as the mid-nineteenth century. Also there are past records for Seaton Carew and Sandsend which, for habitat reasons, could perhaps refer to the *M. denticulata* segregate.



*Myosotella myosotis* (Mouse-eared Snail).

A single dead Rhinoceros Beetle (*Sinodendron cylindricum*) was found by a large log on the river bank. Being a woodland species it seems likely that this had been washed downstream from more suitable habitat and deposited here with flood debris.

**Saturday, 27th July, 10:30 am, leader Eric Gendle GR SE965944. Upper Derwent Valley.**

A party of 8 club members enjoyed a memorable walk in warm sunshine. Amongst the highlights of the day were the sighting of single *Aeshna cyanea* (Southern Hawker) and *Cordulegaster boltonii* (Golden ringed) dragonflies. A wide range of Lepidoptera were flying including *Artogeia rapae*, *Pieris brassicae* and *Artogeia napi*, (Small, Large, and Green Veined Whites respectively). Also seen were *Maniola jurtina* (Meadow Brown), *Thymelicus flavus* (Small Skipper), many *Parage aegeria* (Speckled Wood) and *Aglais urticae* (Small Tortoiseshell), a pair of *Vanessa atalanta* (Red Admiral) and three separate *Melanargia galathea* (Marbled White), on the northern limit of its range. Oak trees were scanned in vain for *Quercusia quercus* (Purple Hairstreak). Two *Muscicapa striata* (Spotted Flycatcher) and a *Dendrocopos major* (Greater Spotted Woodpecker) were noted. Hundreds of *Dactylorhiza fuchsii* (Common Spotted Orchid) were visible in the roadside verges. Two large patches of *Lysimachia vulgaris* (Yellow Loosestrife) were in full flower by the trackside. *Hypericum pulchrum* (Slender stemmed St John's Wort) and *Hypericum tetrapterum* (Square stemmed St John's Wort), along with *Senecio aquaticus* (Marsh Ragwort), and *Scrophularia nodosa* (Common Figwort) together with *Equisetum telmateia* (Wood Horsetail) and a single *Epipactis helleborine* (Broad Leaved Helleborine) were recorded. Where felling had taken place the bare ground was covered in a *Corydalis* sp. The leader was embarrassed to find that a forest track, plainly marked on OS maps, had completely disappeared, which necessitated a scramble through bracken and steep woodland to re-join the planned route.

**Wednesday, 31st July, 6:30 pm, leader David Laing GR NZ453223. Billingham Beck Valley Country Park.**

A very wet evening greeted members, but a short walk was undertaken through the Ecology Parks to the beck. *Echium vulgare* (Vipers Bugloss), *Dipsacus fullonum* (Teasel), *Melilotus officinalis* (Melilot), *Hordeum secalinum* (Meadow Barley), and *Euonymus europaeus*

(Spindle) were notable in the vegetation. *Rivula sericealis* (Straw Dot), a Kingfisher and an *Succinea putris*? (Amber Snail) were also notable.

**Wednesday, 7th August, 10:30 am, leader Jo Scott GR NZ668216. Saltburn Shore.**

12 members met to investigate the rock pools at Saltburn.

Species recorded:-

*Actinia equina* – (Beadlet Anemone)  
*Amphipholis squamata* –(Dwarf Brittlestar)  
*Ansates pellucidum* – (Blue-rayed Limpet)  
*Asterias rubens* – (Common Starfish)  
*Balanus crenatus* – (Barnacle)  
*Botrylloides leachi* – (Colonial Ascidian)  
*Cancer pagarus* – (Edible Crab)  
*Carcinus maenas* – (Shore Crab)  
*Electra pilosa* – (bryozoans)  
*Gibbula cineraria* – (Grey Topshell)  
*Halichondria panacea* – (Breadcrumb Sponge)  
*Hinia spp* –(Whelk)  
*Liocarcinus puber* – (Velvet Swimming Crab)  
*Lithothamnion sp* – (Pink Crust)  
*Littorina littorea* – (Common Winkle)  
*Membranipora membranacea* – (Sea Mat – bryozoans)  
*Mytilus spp* – (Mussel)  
*Nucella lapillus* – (Dog Whelk)  
*Ophiothris fragilis* – (Common Brittle star)  
*Pagarus bernhardus* – (Hermit Crab)  
*Patella vulgata* –(Common Limpet)  
*Pholis gunnellus* – (Butterfish)  
*Psammechinus miliaris* – (Green Sea Urchin)  
*Psidia longicornis* –(Long-clawed Porcelain Crab)  
*Semibalanus balanoides* –(Northern Barnacle)  
*Spirobis rupestris* – (Spiral Worm)  
*Spirobranchus triqueter* – (Keel Worm)  
*Spirobis borealis* – (Sinistral spiral tubeworm)  
*Chondrus crispus* – (Irish Moss)  
*Cladophora rupestris* –(Green algae – racing green)  
*Corralina officinalis* – (Coral Weed)  
*Dumontia contorta* – (Red algae)  
*Fucus serratus* – (Saw Wrack)  
*Fucus vesiculosus* – (Bladder Wrack)  
*Laminaria digitata* – (Oarweed)  
*Laminaria hyperborea* – (Cuvie)  
*Mastocarpus stellatus* – (False Irish Moss)  
*Osmundia pinnatifida* – (Pepper Dulse)  
*Plocamium* – (Red seaweed)  
*Porphyra spp* – (Purple Laver)  
*Saccharina latissima* – (Sugar Kelp)  
*Ulva intestinalis* – (Gutweed)  
*Ulva lactuca* –(Sea Lettuce)



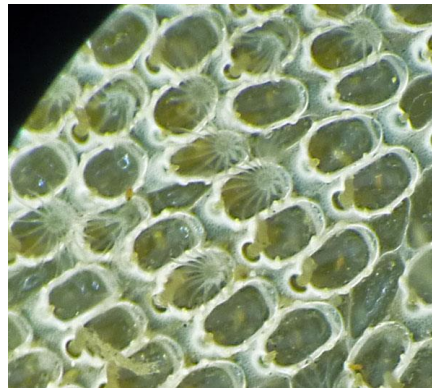


Sea mats, scientifically known as bryozoan (sea-moss) are made up of colonies of tiny animals (zooids). They filter feed by extending their feeding tentacles from the compartment where they live retracting quickly at any sign of danger. You can find them growing on seaweeds e.g *Laminarea* and *Fuscus* and the zooids can be seen using a x20 hand-lens. Two common species found at Saltburn are *Membranipora membranacea* and *Electis spilosa*. *Membranipora* also extends jelly like projections, a different type of zooid known as towers .

*Membranipora membranacea*



*Electis spilosa*



Zooids

*Spirorbis borealis* is a sedentary marine polychaete worm commonly called the sinistral spiral tubeworm. It builds a left handed flat spiral tube about 5mm in diameter. The worm retreats into this tube when out of water but when underwater it filter feeds through green tentacles. It is most often found growing on *Fuscus* and *Laminarea* seaweeds as well as on stones and rocks.



*Spirorbis borealis*

**Saturday, 10th August, 10.00 am, Mick Carroll May Moss and Langdale Forest.**  
This was a YNU VC 62 meeting and will be reported in The Naturalist.

**Wednesday, 14th August, 1.30pm, leader Tony Wardhaugh GR NZ606093. Mill Bank Wood.**

Following a long period of dry weather molluscs were not easy to find with a total of just eleven species being recorded during this visit; Mill Bank Wood has a very rich molluscan fauna with 49 species having been recorded here since 1996. Species of note seen during the visit included *Zonitoides excavatus* (the Hollowed Snail), the only calcifuge snail species in



Britain and not common locally. *Zenobiella subrufescens* (the Brown Snail) is strongly associated with ancient semi-natural woodland in north-east Yorkshire. *Arion flagellus*, the Durham Slug, was a new record for the wood. Closely allied to the ubiquitous *Arion ater* agg. (the Black Slug), it is increasing its range on a national scale. It was first recognized as a separate species in 1987.

Fig 3 *Arion flagellus* on left and *Arion ater* agg. on right. Colour in both species is variable but note the difference in coarseness and spacing of the tubercles.



Also of interest were several *Arianta arbustorum* (Copse Snails) seen feeding on the tops of *Equisetum telmateia* (Giant Horsetail).

Fig 4 *Arianta arbustorum* (Copse Snail) feeding on the tip of a Giant Horsetail.

The list of molluscs found-

<i>Arianta arbustorum</i>	Copse Snail
<i>Arion flagellus</i>	Durham Slug
<i>Arion subfuscus</i>	Dusky Slug
<i>Cepaea nemoralis</i>	Dark-lipped Banded Snail
<i>Cochlicopa lubrica</i>	Moss Snail
<i>Discus rotundatus</i>	Rounded Snail
<i>Oxychilus alliarius</i>	Garlic Snail
<i>Oxychilus cellarius</i>	Cellar Snail

<i>Succinea putris</i>	Amber Snail
<i>Zenobiella subrufescens</i>	Brown Snail
<i>Zonitoides excavatus</i>	Hollowed Glass Snail

In addition the following were noted-

*Pterostichus madidus*

*Spilosoma lubricipeda* (White Ermine)

**Saturday, 17th August, 10:30 am, leader Bill Hall GR SE162972. Foxglove Covert, Catterick Garrison.**

The chances of sightings of dragonflies seemed slight following a very discouraging weather forecast of rain and wind for the day of this meeting. As a result the attendance was low at around seven, although there was the welcome presence of a young member who had joined the BDS just a few days earlier. In fact the forecast turned out to be inaccurate and the day was largely dry so that sightings were made of *Ischnura elegans* (Blue-tailed Damselfly), *Lestes sponsa* (Emerald Damselfly), *Sympetrum striolatum* (Common Darter) and a very settled, obliging (cool?) female *Aeshna cyanea* (Southern Hawker) which allowed many members of the group to obtain very close-up photographs. *Pararge aegeria* (Speckled Wood) and *Maniola jurtina* (Meadow Brown) were active. A Buzzard was heard calling. *Elophila nymphaeata* (Brown China Marks) were active amongst some ponds on the moor edge. A fine clump of *Boletus edulis* (Penny Bun) were found in the woods. One member had a close encounter with some Roe deer. The lichen *Lecanora chlarotera* was found on some twigs.



**Wednesday, 21st August, 10:30 am, leader Alan Simkins GR NZ684085. Castleton to Comondale circular.**

A warm, cloudy day with a weak sun began the day at Eskdale Inn. There were House Martins and Swallows about. The party climbed the hill to some sand pits north of the railway. Meadow Brown (*Maniola jurtina*) were noted with some flowering *Drosera rotundifolia* (Sundew) in the silica quarries. Some fossil plant remains were scattered about in the quarries.

Added by Colin Chatto -

At our Lunch Stop I noticed a number of insects flying with their hind legs dangling in the manner of *Bibio marci* (St. Mark's Fly) but the time of year was not right for them! St. Mark's Flies appear in the Spring around St. Mark's day, 25th April, hence the name. I caught one and noticed the red femora which later identified it to be *Bibio pomonae*. These flies are also known as Red Thighed St. Mark's Flies or alternatively Heather Flies. The latter name is

appropriate as they are usually found on heather moors. There have been reports of swarms in their thousands but they are rare in the south of the UK.

There was a bright orange fungus quite high up in a dead tree. Neil managed to obtain a sample which turned out to be the slime mould *Tubulifera arachnoidea*. Near the end of the walk towards Castleton we saw a number of *Muscicapa striata* (Spotted Flycatcher), now not nearly as common as they used to be in the UK.

**Wednesday, 4th September, 10:30 am, leader Malcolm Birtle GR NZ114242. Cockfield.**

Sunny, warm, fairly still. Heavy mist earlier. The group walked from the car park at the west end of fell, onto the fell top. Some fungi were readily apparent including *Panaeolus semiovatus*, Puffballs, and Waxcaps.

Butterflies- *Pieris napi* (Green Veined White), *Lycaena phlaeas* (Small Copper), *Lasiommata megera* (Wall)

Plants- *Potentilla erecta* (Tormentil), *Campanula rotundifolia* (Harebell), *Digitalis purpurea* (Foxglove), *Veronica serpyllifolia* (Thyme Leaved Speedwell), *Erica cinerea* (Bell Heather), *Calluna vulgaris* (Common Heather), *Achillea millefolium* (Yarrow), *Cerastium fontanum* (Mouse-ear Chickweed), *Crepis capillaris* (Smooth Hawksbeard), *Stellaria graminea* (Lesser Stitchwort), *Lotus corniculatus* (Birds Foot Trefoil), *Euphrasia confuse*, *Euphrasia nemorosa* (Eyebrights), *Myosotis scorpioides* (Forget-me-Not).

A Grey Heron flew past in a stately fashion. After lunch the party walked upstream next to the river and saw the following-

*Linum catharticum* (Fairy Flax), *Trifolium dubium* (Lesser Trefoil), *Veronica beccabunga* (Brooklime), *Galeopsis tetrahit* (Common Hemp-nettle), *Lycopus europaeus* (Gypsywort), *Aphanes arvensis* (Parsley Piert), *Filipendula ulmaria* (Meadowsweet),

Butterflies- *Aglais io* (Peacock), *Pararge aegeria* (Speckled Wood), *Polyommatus icarus* (Common Blue).



There were many *Salmo trutta* (Brown Trout) in the river and a couple of small ponds had *Aeshna juncea* (Common Hawkers) buzzing round them. An oak tree was carrying Knopper Galls (*Andricus quercuscalicis*). The lichen *Lecidella elaeochroma* f. *elaeochroma* was found on twigs.

A small sub-group walked to Butterknowle and walked up past the Bee Hive ovens and noted *Aglais urticae* (Small Tortoiseshell), *Anthophila fabriciana* (Nettletap), Robins Pin Cushion, Grey Wagtail and *Centaurea nigra* (Hardheads).

**Saturday, 14th September, 10:30 am, leader Andy Astbury GR NZ572035. Greenhow area.**

The party walked from the car park at Clay Bank and crossed the valley to Ingleby Incline. It was a cool clear day, with strong sunlight. Small birds were much in evidence such as Chaffinches, Great Tits and Coal tits. A Roe deer crossed the road in front of the group. There were Swallow and House Martins hawking about. Along the old railway to the incline Robins Pin Cushion, *Callitriche* sp. (Starwort), *Eupatorium cannabinum* (Hemp Agrimony), and *Pararge aegeria* (Speckled Wood) were noted.

Some ponds at the top of the Incline were examined for dragonflies. *Aeshna juncea* (Common Hawker), and *Sympetrum striolatum* (Common Darter) were present. In addition, *Gentianella amarella* (Autumn Gentian) was growing well on old ballast. *Lycaena phlaeas* (Small Copper), *Aglais urticae* (Small Tortoiseshell), and *Ematurga atomaria* (Common Heath) were also seen

**Wednesday, 25th September, 10:30 am, leader Aubrey Colling GR SE529928. Anya's Wood.**

**Saturday, 12th October, 10:30 am, leader Neil Baker GR NZ572195. Eston Woods.**

This was a joint meeting with the North East Fungi Group and will be reported in their Newsletter.

The following is a summary of invertebrates noted at some field meetings by A. Wardhaugh -

		Ashberry area	Thrislington	Maze Park	Mill Bank Wood
		9th June 2013	19th June	24th July	14th August
Molluscs					
<i>Myosotella myosotis</i>	Mouse-eared Snail			/	
<i>Pomatias elegans</i>	Round-mouthed Snail	/			
<i>Succinea putris</i>	Amber Snail	/			/
<i>Cochlicopa lubrica</i>	Slippery Snail				/
<i>Pyramidula pusilla</i>	Rock Snail	/			
<i>Lauria cylindracea</i>	Chrysalis Snail		/		
<i>Vallonia excentrica</i>	Excentric Grass Snail	/			
<i>Spermodea lamellata</i>	Plated Snail	/			
<i>Discus rotundatus</i>	Rounded Snail	/			/
<i>Arion ater agg.</i>	Black Slug	/	/		
<i>Arion flagellus</i>	Durham Slug				/
<i>Arion subfuscus</i>	Dusky Slug	/			/
<i>Vitrea crystallina</i>	Crystal Snail	/			
<i>Aegopinella nitidula</i>	Smooth Snail	/		/	
<i>Oxychilus cellarius</i>	Cellar Snail	/			/
<i>Oxychilus alliarius</i>	Garlic Snail				/
<i>Zonitoides excavatus</i>	Hollowed Snail				/
<i>Limax maximus</i>	Great Slug	/			
<i>Lehmannia marginata</i>	Tree Slug	/			
<i>Euconulus fulvus</i>	Tawny Snail	/			
<i>Clausilia bidentata</i>	Door Snail	/			
<i>Candidula intersecta</i>	Wrinkled Snail		/		
<i>Monacha cantiana</i>	Kentish Snail			/	
<i>Zenobiella subrufescens</i>	Brown Snail				/

		Ashberry area	Thrisling ton	Maze Park	MillBank Wood
<i>Trochulus striolatus</i>	Strawberry Snail	/	/	/	
<i>Trochulus hispidus</i>	Hairy Snail		/		
<i>Arianta arbustorum</i>	Copse Snail	/			/
<i>Cepaea nemoralis</i>	Brown-lipped Snail	/	/		/
<i>Cepaea hortensis</i>	White-lipped Snail	/		/	
<i>Cornu aspersum</i>	Common Snail		/	/	
Millipedes					
<i>Cylindroiulus punctatus</i>	Blunt-tailed Snake Millipede				/
<i>Julus scandinavicus</i>		/			
<i>Ommatoiulus sabulosus</i>	Striped Millipede			/	
<i>Polydesmus angustus</i>	Common Flat-backed Millipede				/
<i>Tachypodoiulus niger</i>	Black Snake Millipede			/	/
Centipedes					
<i>Geophilus flavus</i>					/
Beetles					
<i>Nebria brevicollis</i>	European Gazelle Beetle	/			
<i>Pterostichus madidus</i>	Black Clock Beetle				/
<i>Sinodendron cylindricum</i>	Rhinoceros Beetle			/	

## ***Limax cinereoniger* (the Ash-black Slug) in Cleveland**

A A Wardhaugh

*Limax cinereoniger*, the largest British slug, is said by some to grow to the spectacular length of 300mm (12in). However this refers to populations elsewhere in Europe (Quick 1960, Kerney & Cameron 1979) and the biggest individuals I have seen in the Cleveland area have been only about 200mm long, nonetheless still an impressive size. For such a large slug it can be quite elusive, often hard to find even at sites where it is known to occur. In springtime juveniles can be more abundant but these are unlike the adults in appearance and easy to overlook. Typical adults, at least in north-east Yorkshire, are black with a pale mid-dorsal keel extending about two thirds of the length of the body from the tip of the tail forwards towards the hind margin of the mantle (Fig. 1).



Fig 1: *Limax cinereoniger*, typical black form (Lazenby Bank).

The mantle bears a pattern of concentric ridges reminiscent of a fingerprint, a feature of the family to which *L. cinereoniger* belongs (the Limacidae). The sole has black edges with a sharply defined white central stripe (Fig. 2).



Fig 2: *Limax cinereoniger* from below, showing characteristically striped sole (Lazenby Bank).

When viewed with a hand-lens the tentacles can be seen to be closely spotted (Fig. 3).



Fig 3: *Limax cinereoniger* from below, showing spotted tentacles (Lazenby Bank).

Being large and black it is superficially similar to *Arion ater*, the very common Great Black Slug (Fig. 4) but this lacks the keel and has a mantle which is shagreened (covered in very small tubercles giving a sandpaper-like appearance).



Fig 4: *Arion ater*. Note shagreened mantle and absence of a dorsal keel (Grisedale, Cumbria).

The sole of *A. ater* can sometimes have a colour pattern similar to that of *L. cinereoniger* but the boundary between the dark edges and the paler central area is diffuse



rather than strongly defined. When handled, *A. ater* is firmer in texture than *L. cinereoniger* which is generally softer and more flexible.

Juvenile *L. cinereoniger*, in complete contrast to the adults, are a pale brown-pink colour (Fig. 5), darkening gradually with age.



Fig 5: *Limax cinereoniger* juvenile about 25mm long (Lazenby Bank).

Even when still quite small they have the characteristic spotting on the tentacles, a feature which serves to distinguish *L. cinereoniger* from its more common near relative *L. maximus*, the Leopard Slug (Fig. 6).



Fig 6: *Limax maximus*. Note absence of spotting on tentacles (Ormesby Hall area).

The characteristic sole pattern begins to appear rather later; individuals which I reared in captivity darkened from pinkish to a deep red-brown by the time they were 60 to 80mm extended length, when darker pigmentation was just beginning to develop along the outer edges of the sole.

Appearance of adults at a national level is very variable. The overall colour can be from pale brownish cream, through varying shades of brown or grey to black (Figs. 7 & 8).



Fig 7: *Limax cinereoniger*. Brown form (Stenhouse Wood, Dumfries).



Fig 8: *Limax cinereoniger*. Grey form (Loch Garten, Cairngorms).

There may be a longitudinal band or line of spotting on each side of the body in a contrasting colour and sometimes the tripartite sole pattern can be absent. Such is the variability of *L. cinereoniger* on a European-wide scale that it could even comprise more than one species. (Rowson *et al.* 2012).

Although by far the most common form of *L. cinereoniger* in Cleveland is black, as described above, I have come across the occasional colour variant, recently for example an individual at Oakrigg Wood near Staithes (NZ784171 on 16<sup>th</sup> August 2011). This was light grey-brown with a pale keel, a pale band down each side of the body and the sole edges only a little darker than the centre (Fig 9). Dr L. Lloyd-Evans found a similar pale individual in Roxby Wood, near Staithes (3<sup>rd</sup> May 1986), this with a pale sole lacking the darker edges (Anon. 1986).



Fig 9: *Limax cinereoniger* (Oakrigg Wood, Staithes).

The status of *L. cinereoniger* as a species or species aggregate is complicated by the fact that these hermaphrodite animals can at times self-fertilize as well as reproduce sexually (Oldham, 1942). The individual found at Oakrigg Wood mentioned above was retained for a few weeks before being returned to the site where it was found. During this time it was kept in isolation and produced three batches of about 100 eggs each. A few of these were kept and reared to near maturity when they resembled closely the parent animal (Wardhaugh 2011). Were these offspring the result of self-fertilization or had the parent already mated before being found? Probably the latter. I have had another captive *L. cinereoniger* lay batches of infertile eggs without having mated.

I have witnessed the full sequence of mating behaviour in the wild only once, this in Wilton Wood (NZ592195 on 20<sup>th</sup> June 1985 between 2005 and 2040hr). Regrettably I did not have a camera with me and had to rely on field notes and sketches to record the event. It was a calm, bright and mild evening. Two *L. cinereoniger* were noticed ascending the north side of a sycamore trunk, where the bark was well covered with *Pleurococcus*. The tree was about 15m tall and the vegetation around it included tall, dense grass and brambles. When about 0.6m above ground level, where the trunk of the tree was about 0.5m in diameter, the two slugs began circling each other clockwise, each apparently ingesting mucus from the body surface of the other. By 2010hr they were orientated head down, their hind ends attached to a pad of thick mucus on the tree surface and their bodies entwined. Each then everted part of the genitalia via the reproductive pore (which is on the right side of the body, just behind the head) and these became entwined, progressively more and more over a period of about a minute ([www.naturephoto-cz.com/ashy-grey-ash-black-slug-photo-16517.html](http://www.naturephoto-cz.com/ashy-grey-ash-black-slug-photo-16517.html)). During this

process spermatozoa embedded in a mass of mucus will have been exchanged but this was not visible. By 2020hr the entwined genitalia had shortened from about 20mm to about 10mm and both animals had become freely suspended, each by a short string of mucus originating from the pad on the tree. Between 2025 and 2030hr the two animals separated. After this they retracted the genitalia, disengaged from the mucus and moved apart. This behaviour pattern was very much as outlined by Quick (1960) although he states that mating takes place at night. Throughout this time I had been sitting by the tree quiet, still and concealed by the surrounding grasses and bramble. While the slugs were parting a roe buck stole by, slowly, silently, seemingly totally unaware of my presence, passing so close that I could have reached out and almost touched it. Such are the occasional joys of woodland solitude.

On one occasion I have witnessed what might be described as swarming of *L. cinereoniger*. This was on a warm summer afternoon after rain in Mulgrave Woods, near Sandsend (NZ8411 on 2<sup>nd</sup> June 1999). At about 1500hr slugs began to appear in numbers across a wide area of the ground (tens, possibly more than a hundred) and began ascending the trunks of trees, oak, ash and beech but interestingly not conifers. Perhaps this was a prelude to mating.

*L. cinereoniger* is described by Kerney (1999) as “typical of old deciduous or coniferous woods, sheltering by day under logs and loose bark. Occasionally it may be found on rocks or in grassland adjacent to woods.....Most sites are on acid soils.” In Cleveland I have found it very largely only in ancient semi-natural woodland. However, recently I have encountered it in a few surprising sites. At Lazenby Bank (NZ5718) there appears to be a population amid an area of beeches where a good deal of fallen timber has been allowed to accumulate. This is an enigmatic site from a molluscan viewpoint, with a fairly rich fauna, including *Leiostylia anglica* (the English Chrysalis Snail), another species associated with old woodland (Kerney & Stubbs 1980, Wardhaugh 2000). In spite of this some other fairly conspicuous woodland species such as *Cochlodina laminata* (the Plaited Door Snail) and *Clausilia bidentata* (the Two-toothed Door Snail) seem to be absent. Lazenby Bank was not considered to be an ancient semi-natural woodland in an inventory compiled by Cooke (1987). At Lazenby Bank I have more than once found *L. cinereoniger* and *L. maximus* together in the same small area; on one occasion several juveniles of both species were sheltering together beneath the same piece of fallen bark (29<sup>th</sup> March 2012). Kerney (1999) states that they are found together only rarely.

Other sites where *L. cinereoniger* has been found recently that are not ancient woodland include Clapham’s Wood (NZ563162 on 30<sup>th</sup> October 2012) where two individuals were present beneath fallen spruce bark at the boundary between deciduous woodland and an area of conifers. Another individual was found at Rye Hill near Normanby (NZ556173 on 3<sup>rd</sup> May 2012) under a fallen timber fence post amid scrub near deciduous woodland edge. Perhaps the most surprising site at which I have found *L. cinereoniger* was on Eston Moor, at the western side of the marsh at the former Barnaby reservoir site (NZ562171 on 16<sup>th</sup> August 2012). It was just beyond the edge of birch woodland beneath a sandstone rock. Clearly this is not ancient semi-natural woodland but possibly a relatively undisturbed area in the past. As an additional surprise I visited this spot the following year on 26<sup>th</sup> April, turned over the same stone not seriously expecting to find anything but there was a fairly large sub-adult sized *L. cinereoniger* (not large enough to have been the same individual as found the previous year). There were three black bodied *A. ater* with black and pale grey tripartite soles under a nearby stone which shows the need to look carefully at what one finds.

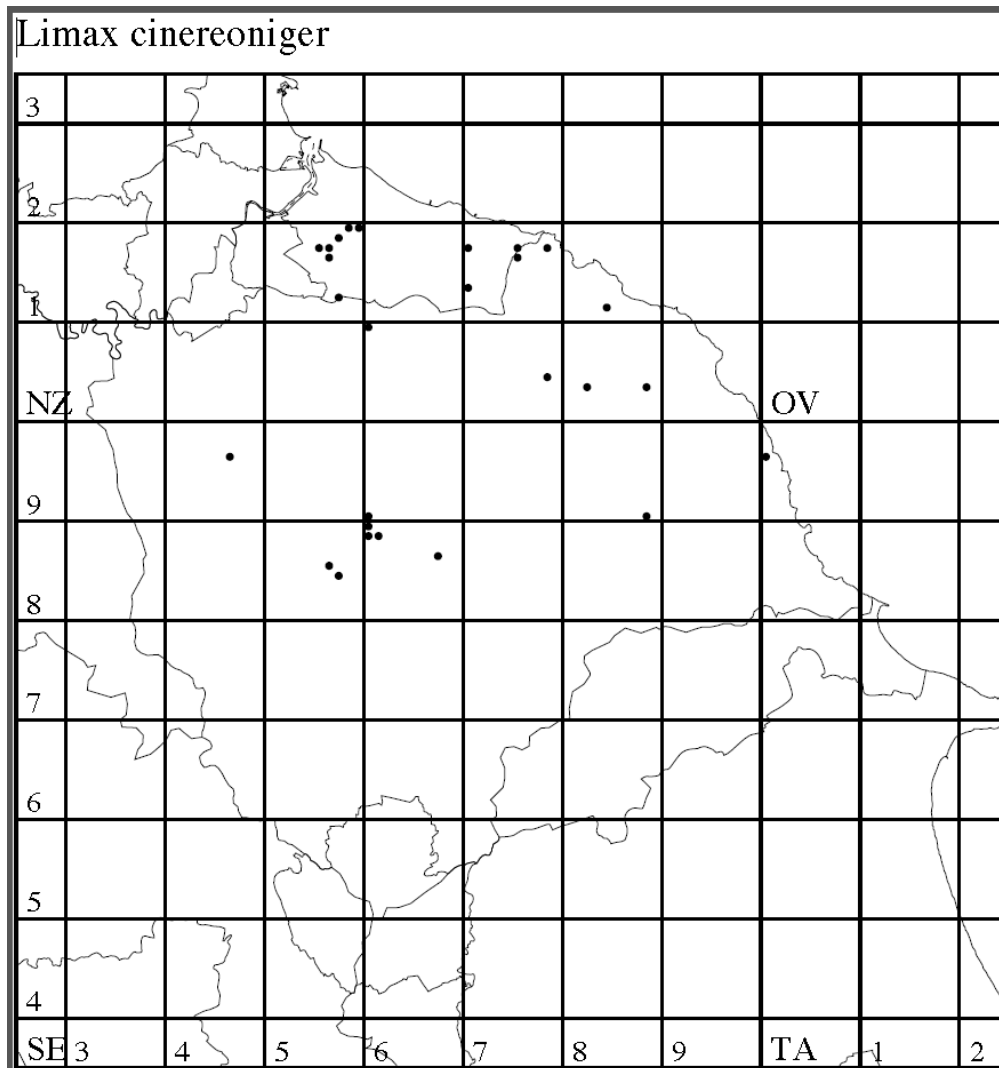
Apart from these exceptions all my other records for *L. cinereoniger* in the Cleveland area are from woods listed as ancient semi-natural by Carter (1987) and Cooke (1987). Adults are best found by searching beneath larger pieces of fallen timber such as bark, branches and especially logs. Although somewhat elusive, *L. cinereoniger* seems to be quite widely distributed in suitable habitat (Table & Map).

### **Limax cinereoniger in north-east Yorkshire VC62**

Date is the most recent record for each site

Recorder A A Wardhaugh unless otherwise stated

<b>Place</b>	<b>Grid Ref</b>	<b>Date</b>	<b>Recorder</b>
Ashberry Pasture Reserve	SE5685	1.5.1993	
Avens & Gerrick Woods	NZ7013	June, 1983	A. Norris: Naturalist 109: 151 (1984)
Big Wood, Thimbleby	SE4696	22.5.2004	D. Lindley & A. Norris: Naturalist 130: 138 (2005)
Bransdale	SE6090	12.5.2012	
Buber Wood, Goathland	NZ821030	17.8.2002	
Castle Bank Wood, Wilton	NZ5819	10.8.1995	
Clapham's Wood, Eston Moor	NZ563162	30.10.2012	
Clarkson's Wood, Kilton	NZ7017	19.9.1998	
Cow House Bank	SE6088	12.5.2012	
Cow House Bank	SE6089	12.5.2012	
Cow House Bank	SE6188	12.5.2012	
Easby Wood	ca. NZ5809	12.7.1890	W. D. Roebuck: Naturalist 15: 272 (1890)
Easington Wood	NZ7517	17.5.1981	L. Lloyd-Evans: Naturalist 107: 103 (1982)
Eston Moor	NZ5617	16.4.2013	
Hayburn Wyke	TA0096	26.9.1992	
Kirkdale Wood East	SE674862	25.4.1999	
Lazenby Bank	NZ5718	28.6.2012	
May Beck	NZ8803	8.8.2002	
Mill Bank Wood, Kildale	NZ6009	7.6.1998	
Mulgrave Woods, Sandsend	NZ8411	2.6.1999	
Newton Wood, Great Ayton	NZ5712	17.5.1998	
Oakrigg Wood, Staithes	NZ7817	16.8.2011	
Rievaulx Terrace	SE578847	25.5.2002	
Roxby Wood	NZ755167	13.11.2013	
Rye Hill area, Normanby	NZ5517	3.5.2012	
Staindale, Dalby Forest	SE8890	1.10.2005	
Wilton Wood	NZ5919	21.7.1994	



At present no up-to-date guide to British slugs exists. Fortunately one should appear in the Field Studies Council AIDGAP series fairly soon (Rowson *et al.* 2012) and hopefully it will stimulate more interest in this group of invertebrates among field naturalists. Many of our slug species, like *Limax cinereoniger*, are intriguing in their habits, of uncertain taxonomic rank and very variable in appearance. Beneath the slime they are more interesting and more attractive than a brief glance reveals.

### Acknowledgement

The map accompanying this article was produced by MapMate using Digital Map Data © Bartholomew 2002.

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## **Jurassic Plant Fossils at Marske Quarry**

*David L Smith*

In November 2012 Tees Valley Regionally Important Geological Sites (TVRIGS) Group secured a grant from the Heritage Lottery Fund for their project, Jurassic Plants at Marske Quarry, Errington Woods, New Marske. TVRIGS are using the money to tell the story of Marske sandstone quarry and the Jurassic plant fossils that were collected there around the end of the 19<sup>th</sup> and early 20<sup>th</sup> Centuries when the quarry was a well-known fossil site. The project aims to revive local and national interest, with workshops for local school children, an open day for the public at Dorman Museum in Middlesbrough, which houses a collection of fossils from the site, and an event at the quarry to see where the fossils came from.

The former importance of the quarry and its fossil plants came to the attention of TVRIGS from information passed on by CNFC President Vic Fairbrother, who had found references to the quarry in CNFC Record of Proceedings, in papers by Rev. John Hawell (1902) and Rev. George J. Lane (1907-8 & 1908-9). Early collecting and examination of the fossils was undertaken by CNFC. A visit by the Yorkshire Geologists is recorded and a distinguished visitor was Professor A.G.Nathorst, geologist, paleobotanist and arctic explorer from the Swedish Natural History Museum, Stockholm. Particular fossils were sent for identification to Mr A.C.Seward, author of *The Jurassic Flora of Yorkshire* and later to become Professor Sir Albert Seward, Professor of Botany at Cambridge University. He named a new species from the quarry *Dictyozamites hawellii* after its collector, Rev. John Hawell, then President of CNFC. Later, Marske quarry was commemorated in a new genus of fossil conifers, *Marskea*, described and named by Professor Rudolf Florin of the Bergius Botanical Garden in Stockholm, from a specimen collected in the quarry.

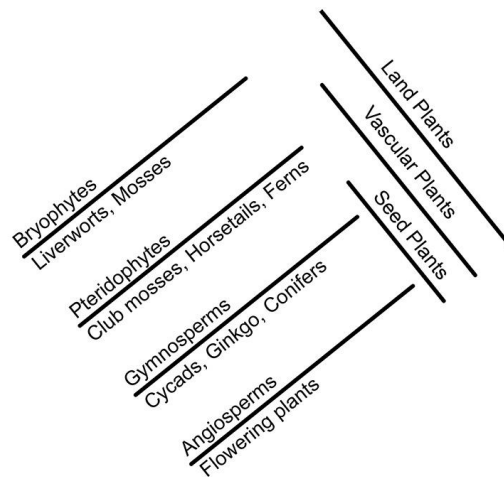
My involvement with the TVRIGS Group came about through a chance conversation with their chairman, Alan Simkins. He described the nature of their project and went on to say that, although proficient geologists, the group members knew little about fossil plants and had so far been unable to find anyone with the necessary expertise in paleobotany to instruct them. When I explained my academic credentials in paleobotany I was duly commissioned to provide appropriate instruction. On 23<sup>rd</sup> January 2013 Paul Forster and I, as representatives of CNFC, met with Alan Simkins and John Waring of TVRIGS at the Dorman Museum to view the Marske quarry fossils from the museum collection, which Paul photographed. Then, on 14<sup>th</sup> February I delivered a PowerPoint presentation on *The Yorkshire Jurassic Flora* and its botanical and paleobotanical background at a meeting of TVRIGS in the Dorman Museum. The following schedule formed the basis of the PowerPoint presentation and printed copies of it were given to group members.

### **The Yorkshire Jurassic Flora**

### **The Botanical Background**

Land Plants fall into four structural and functional categories – Bryophytes, Pteridophytes, Gymnosperms and Angiosperms – that correspond to the four major evolutionary steps from the initial colonisation of the land to the evolution of the flowering plants, which now constitute the dominant vegetation of the earth.





The first evolutionary step entailed the development of a water resistant surface layer, the **cuticle**, to prevent dehydration, and reproduction via wind dispersed spores. The **Bryophytes** (liverworts, hornworts and mosses) are our simplest land plants. They lack specialised water- and food-conducting vascular tissues and so are unable to attain large size. Many grow flat on the ground and even the largest attain a height of only a few centimetres. They depend on the presence of water for fertilization – they have motile sperms – and so most are confined to moist habitats. The extant liverworts are probably the closest plants we have to the first colonisers of the land.

The second step was the evolution of vascular tissues and in particular of the water-conducting tissue **xylem**, commonly known as wood. The walls of the conducting cells of the xylem are impregnated with a complex polymer called **lignin**, which, in addition to rendering them water-proof, confers on them great strength and rigidity. The presence of lignified xylem provides the potential for attaining large size. The **Pteridophytes** (club mosses, horsetails, and ferns) are vascular plants but, like the Bryophytes, they reproduce via wind dispersed spores and also have motile sperms which make them dependent on water for fertilization, thus generally restricting them to moist habitats.

The third step was the evolution of **seeds**, which removed the need for the presence of free water for fertilization to occur, thus opening up the potential for colonising drier habitats. The **Gymnosperms** (Cycads, *Ginkgo*, Conifers and Gnetales) have evolved more complex vascular systems than those of Pteridophytes. This permits the attainment of greater size and most are trees. All possess naked seeds, which are borne either on stalks or on scales in cones, but which remain open to the atmosphere, an essential requirement for their mode of pollination by wind dispersed pollen grains.

The fourth step was the complete enclosure of the seeds in an ovary, which develops into a fruit. This is the level of evolution attained by the **Angiosperms** (flowering plants).

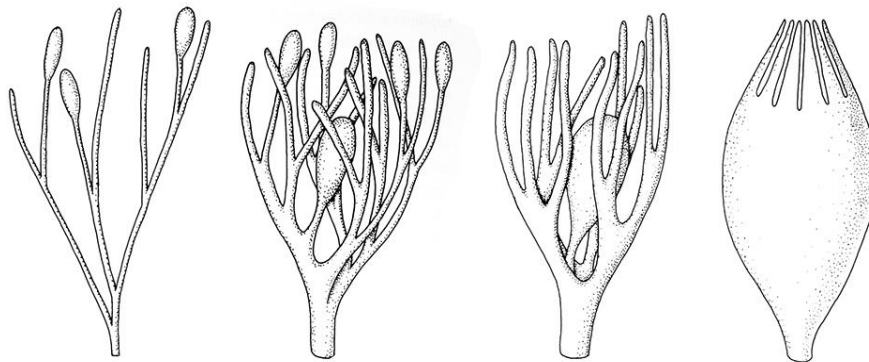
### The Evolution of Seeds

The spores of Pteridophytes are borne in a structure called a sporangium. During the late Devonian and early Carboniferous periods several disparate groups of plants at the pteridophyte level evolved a condition called **heterospory**, the production of sporangia and

spores of two sizes: megasporangia producing **megaspores** and microsporangia producing **microspores**. Each megasporangium produced four large megaspores, which were functionally female; each microsporangium produced numerous microspores, which were functionally male.

Heterospory is the essential first step leading to the evolution of seeds. The subsequent series of steps probably occurred independently in several pteridophytic groups but led eventually to the evolution of the two earliest recognised groups of seed-bearing plants, pteridosperms and cordaites.

The immature seed before pollination and fertilization is called an **ovule**. The sequence of evolution from megasporangium to ovule entailed the reduction of megaspores from four to one, the retention of the megaspore in the sporangium, and the enclosure of the megasporangium by surrounding branchlets (called **telomes**), which eventually fused to form a sheathing **integument**.



The microspores became pollen grains

### **The Nature of Plant Fossils**

Plant fossils are almost always fragmentary. The simplest way to understand the reason for this is to visualise a wood in autumn, with the ground littered with detached leaves, leaf fragments, twigs, fructifications or seeds, occasionally a branch or fallen tree trunk, with much of the material partially decayed by fungi. Essentially, this is the kind of material that has given rise to our fossils. After being detached from the plant the Jurassic fossils have been preserved in a range of aquatic habitats, including freshwater ponds and lakes, coastal marsh and various marine deposits. It is a consequence of the fragmentary nature of the fossils that different parts of a plant have commonly been assigned to different **form genera**. Determining which bits belong to the same plant species entails detailed microscopic study of features such as vein patterns and preserved cellular details.

There are three main modes of preservation of plant fossils: **petrifications**, in which tissues are structurally preserved by infiltration with calcite, silica or pyrite; **compressions**, in which the tissues are compressed as a thin layer of coal-like material; and **casts** and **impressions**, which contain no tissue residues. Most of the Yorkshire Jurassic plants are preserved as

compressions, which, when suitably treated, have yielded much information on structure, particularly of cuticles.

## **Plant Groups Represented in the Yorkshire Jurassic**

### **Bryophytes**

The sole representative of this group is a liverwort, *Hepaticites arcuatus*.

### **Pteridophytes**

Two categories of Pteridophyta are present. **Sphenopsids** are represented by *Equisetum columnare* and **Filicopsids** are represented by a range of ferns, most of them attributed to extant families and genera.

### **Gymnosperms**

Gymnosperms are represented by a very diverse assemblage of **Pteridosperms**, **Cycadales**, **Bennettitales**, **Ginkgoales** and **Coniferales**. A little understood group, **Czekanowskiales**, was formerly included in Ginkgoales but is now treated as a separate group of Gymnosperms.

Pteridosperms were so called because the first ones to be recognized had fern-like foliage bearing seeds. In many pteridosperms the seeds are borne in an open **cupule**. Five species represented by leaf fossils are assigned (tentatively) to this category. *Caytonia*, formerly classed as a pteridosperm is now in its own order, **Caytoniales**, thought to be a derivative of the pteridosperms. The berry-like female fructification of *Caytonia* that contains the seeds is regarded as a modified pteridosperm cupule.

Cycadales include both living and fossil members. A cycad is typically a small tree with a stout, unbranched trunk bearing a crown of large pinnate leaves. Male fructifications are cones consisting of scales (microsporophylls) covered on the under surface with pollen sacs (microsporangia). Female fructifications are cones consisting of megasporophylls (modified leaves), each bearing two (or sometimes two rows) of seeds. In the Yorkshire Jurassic four leaf genera are ascribed to cycads and both male (*Androstrobus*) and female fructifications (*Beania*) have been described.

Bennettitales became extinct in the Cretaceous. They resemble cycads in growth habit but their leaves differ in vein patterns and cuticle characters, and their fructifications are very different, superficially resembling a flower, which may be either bisexual or unisexual. Six leaf genera are ascribed to Bennettitales. Fructifications include *Williamsoniella*, which is bisexual, *Williamsonia*, which is female and *Weltrichia*, which is male.

Ginkgoales were a diverse group in the Jurassic but are now represented by the sole tree species, *Ginkgo biloba*. The distinctive characteristic is the stalked fan-shaped leaf with its dichotomous branching pattern and dichotomous venation. The female fructification is a stalk bearing at its tip two or three seeds; the male resembles a catkin. Leaves of four genera (including *Ginkgo*) have been recorded from the Yorkshire Jurassic and are locally common. The few fructifications found closely resemble those of *G. biloba*.

Czekanowskiales were probably trees. They are represented by two foliage genera (*Czekanowskia* and *Solenites*) and a genus of female fructifications (*Leptostrobus*).

Coniferales range from shrubs to forest trees bearing leaves in the form of needles or scales. Conifer fossils are common in the Yorkshire Jurassic but mostly as detached sterile twigs with foliage that are difficult to assign to a family. Reproduction is by separate male and female cones, several of which have been recorded and assigned to living families, including the monkey puzzle family, Araucariaceae, the wood from members of which is reported to be the source of jet. The yews (*Taxus* and other genera such as the fossil *Marskea*) are often treated as a separate order, Taxales.

## **Selected Fossil Genera of the Yorkshire Jurassic**

**Bryophytes:** *Hepaticites*

### **Pteridophytes**

Sphenopsids: *Equisetum*

Filicopsids:

Marattiales – *Marattia*, *Angiopteris*

Osmundales – *Cladophlebis*, *Osmundopsis*, *Todites*;

Filicales –

Matoniaceae: *Phlebopteris*, *Matonia*

Dipteridaceae: *Clathropteris*, *Dictyophyllum*

Dicksoniaceae: *Coniopteris*

Thelypteridaceae: *Aspidistes*

### **Gymnosperms**

Pteridosperms (leaf genera) – *Ctenozamites*, *Pachypteris*, *Stenopteris*

Caytoniales – *Caytonia* (female fructification), *Caytonanthus* (male), *Sagenopteris* (leaf)

Cycadales –

Leaf genera – *Ctenis*, *Pseudoctenis*, *Paracycas*, *Nilssonina*

Female fructification – *Beania*

Male cone – *Androstrobus*

**Note:** *Nilssonina compta* (the commonest species), *Beania gracilis* and *Androstrobus prisma* are probably from the same plant species.

Bennettitales –

Leaf genera – *Anomozamites*, *Otozamites*, *Nilssoniopteris*, *Pterophyllum*, *Ptilophyllum*, *Zamites*

Fructifications – *Williamsonia* (female), *Weltrichia* (male), *Williamsoniella* (bisexual)

**Note:** *Nilssoniopteris vittata* and the bisexual *Williamsoniella coronata* are from the same plant species.

Ginkgoales –

Leaf genera – *Baiera*, *Eretmophyllum*, *Ginkgo*, *Sphenobaiera*

Fructifications – *Ginkgo*

Czekanowskiales –

Leaf genera – *Czekanowskia*, *Solenites*

Female fructification – *Leptostrobus cancer*

**Note:** *Leptostrobus cancer* and *Solenites vimineus* are probably from the same plant species.

Coniferales –

Foliage genera – *Bilsdalea*, *Brachyphyllum*, *Cyparissidium*, *Elatides*, *Elatocladus*, *Geinitzia*, *Marskea*, *Pagiophyllum*, *Pityocladus*

Families with cones –

Araucariaceae: *Brachyphyllum mammillare*, male and female

Cheirolepidiaceae: *Brachyphyllum crucis*, male and female

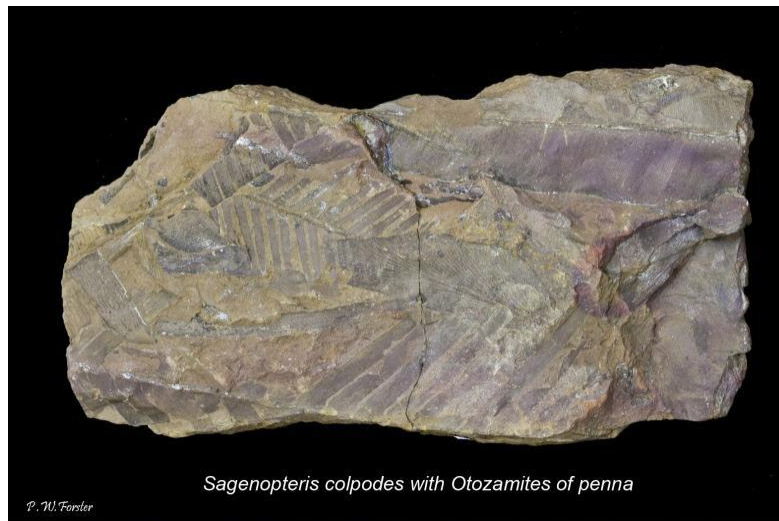
Pinaceae: *Pityocladus scarburgensis*, female only

Podocarpaceae: *Cyparissidium blackii*, male and female

Taxaceae: *Marskea jurassica*, male and female

Unassigned foliage form genus – *Taeniopteris*, pinnate leaves or entire leaves with pinnate venation (thought probably to include foliage of ferns, pteridosperms, Cycadales and Bennettitales)





## 2013 Annual Botanical Report for North-east Yorkshire (V.-c. 62)

V. Jones and J. Magee

10,509 records have been entered for 2013 giving a total of 288,479 records on our MapMate database. Important work visiting old sites for the Rare Plant Register (RPR) plants has continued – the RPR is updated annually. Tetrad recording in different hectads is ongoing with the view to achieve good hectad coverage for the next national Atlas.

There were ten new vice-county records (VCR) – the native *Plantago major* subsp. *intermedia* (Greater Plantain) on the Castle Howard Estate (CHE); the established aliens exhibiting natural regeneration *Quercus suber* (Cork Oak) at Kirkleatham and *Sorbus mougeotii* (Mougeot's Whitebeam) near Whitby; the casuals *Ageratum houstonianum* (Flossflower) at Brotton, *Papaver orientale* s.s. near Coneysthorpe, *Dipsacus laciniatus* near Nunthorpe and *Chenopodium quinoa* (Quinoa) near Scarborough; the hawkweed *Hieracium coniops* on the CHE and two dandelions *Taraxacum prionum* and *T. subhuelphersianum* at Moorsholm and Ingleby Arncliffe respectively.

Second VCRs were *Chenopodium suecicum* (Swedish Goosefoot) near Scarborough, *Festuca brevipila* (Hard Fescue) by the A19 near Ingleby Arncliffe and *Sisyrinchium californicum* (Yellow-eyed-grass) at Hutton Rudby.

Other good records for the RPR from the CHE included *Calamagrostis canescens* (Purple Small-reed), *Spergularia rubra* (Sand Spurrey), the hybrid Burdock *Arctium x nothum* and *Dactylorhiza praetermissa* (Southern Marsh-orchid). Elsewhere *Spergularia media* (Greater Sea-spurrey), now a rare plant in the county, was discovered in several places by the Esk at Whitby; *Trifolium fragiferum* (Strawberry Clover) was refound at Coatham Marsh (may now be only two extant sites); *Verbena officinalis* (Vervain), always rare in the vice-county, turned up N of Charltons and *Catabrosa aquatica* (Whorl-grass) was located near Boltby.

We have continued to record willowherb hybrids, the most interesting finds being a beautiful plant of *Epilobium x erroneum* = *E. hirsutum* x *E. montanum* (Great Willowherb x Broad-leaved Willowherb) near Wass and *Epilobium x schmidtianum* = *E. obscurum* x *E. palustre* (Short-fruited Willowherb x Marsh Willowherb) found in two sites at the Hole of Horcum and in Rosedale – it is likely the latter hybrid is overlooked as the parents often grow together in and by flushes in the North York Moors.

The coast between the Tees estuary and Saltburn was thoroughly searched for *Elytrigia*. *E. juncea* (Sand Couch) is frequent and locally abundant; *E. atherica* (Sea Couch) is restricted to one sizeable patch in the sand-dunes at the South Gare; there are several large colonies of *E. x acuta* = *E. artherica* x *E. juncea* (Sea x Sand Couch) and two smaller patches of *E. x laxa* = *E. repens* x *E. juncea* (Common x Sand Couch). While conducting these researches it was pleasing to note that *Atriplex glabriuscula* (Babington's Orache) was flourishing in several places and to find two small groups of the rare *Salsola kali* subsp. *kali* (Prickly Saltwort). The banks of the saline part of the Esk between Whitby and Ruswarp were, in places, dominated by *Elytrigia* – all the specimens examined proved to be *E. atherica* f. *setigera*. It is hoped in 2014 to search for *Elytrigia* on the rest of the coast in vice-county 62.

We are grateful to John Akeroyd, John Richards and Michael Wilcox for checking specimens.

## **Webb's Wainscot (*Archanara sparganii*) at South Gare**

*P.W.Forster*

Webb's Wainscot was first reported in Britain in 1879. A major expansion in range north and west from the 1980s led to a population at Spurn from 2002 with many records over the next few years. More recently there has been a decrease with just single records in 2010 and 11. There was a single record to the north of our area at Tynemouth in 2006.

The site at South Gare opposite the Blast Furnace (NZ5626) where three Webb's Wainscot were attracted to light on 22-08-13. This is a new record for VC 62.



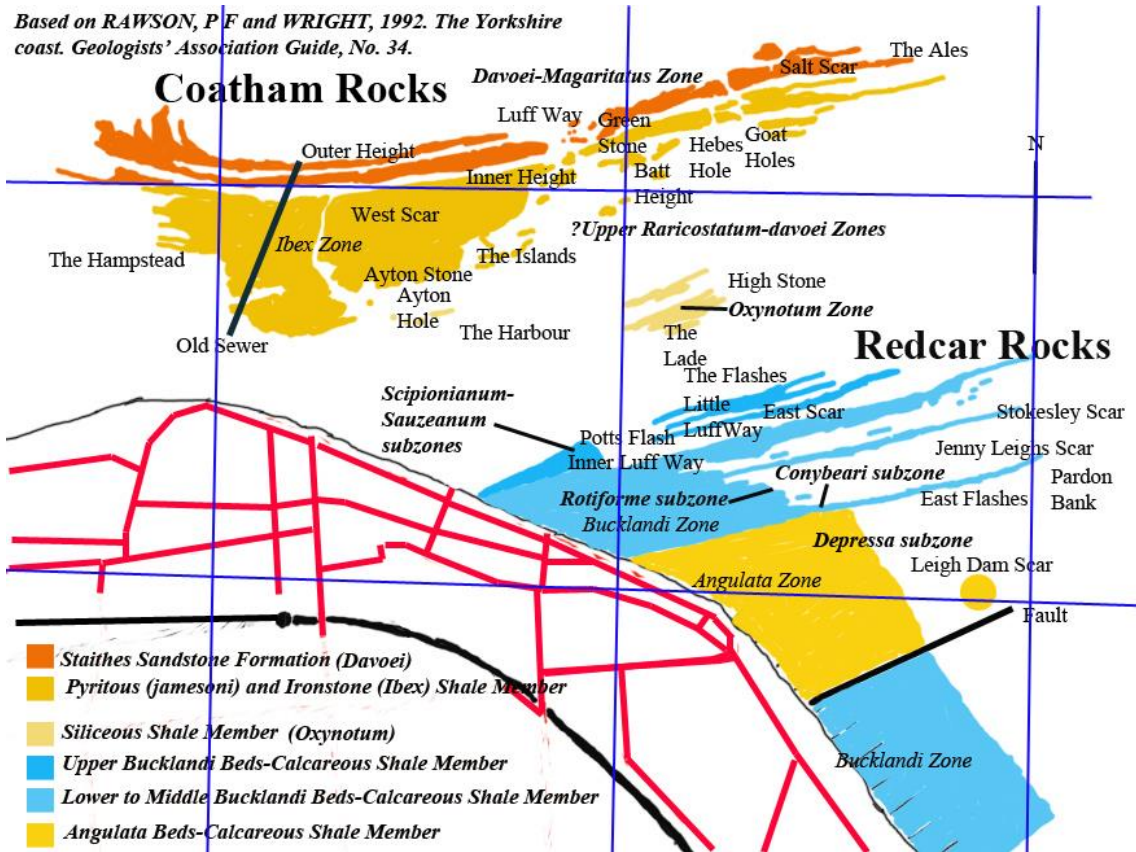


## Finding a Reference Position in Redcar Rocks using a Hand Held Geographical Positioning System

*M. Birtle (m\_birtle@hotmail.com)*

### Redcar Rocks

Redcar Rocks consist of The Flashes, East Scar, Stokesley Scar, Jenny Leighs Scar and Leigh Dam Scar. The rocks are part of the Redcar Mudstone Formation (Jurassic).



### **Ralph Tate and J. F. Blake**

In 1876 Ralph Tate and J. F. Blake published *'The Yorkshire Lias'*, a book which described the Lower Jurassic strata in the county. They provided a detailed description of Redcar and Coatham Rocks.

In 2004 Page reviewed the published descriptions of Redcar Rocks in *'British Lower Jurassic Stratigraphy. Geological Conservation Review Series'*. The Tate and Blake section was described as *'The only detailed published description of the Redcar Rocks succession'*. Some other detailed work has been carried out but remains unpublished in a readily available source.

Page also noted that *'Despite the apparently meticulous investigation by Tate and Blake (1876), their description of the section has proved difficult to correlate with that now seen. (Lord, 1971).'* Lord studied and described Ostracoda collected from Redcar but was unable to recognise the beds in Blake and Tate section.

Each bed in the Blake and Tate section was numbered, and a thickness and description of the rock was recorded. For some beds a brief description of the location and a list of fossils were provided. Unfortunately, the authors used Redcar Pier as a reference to establish the position of the beds. Work started on the pier in 1871, and it was opened in 1873. It was breached and seriously damaged a number of times; deliberately so during the Second World War. Final demolition took place in 1981. Consequently, the reference positions needed to locate beds in the Tate and Blake section have gone. However, the remains of some supporting columns remain on the rocks. Baker and Tate numbered the columns of the pier. Unfortunately, there are not enough columns remaining to establish which columns they are.

The position of one of the columns was calculated by GPS as Latitude 54.619286, Longitude -1.057546, GR NZ60952531. The spacing between the remaining columns has been measured. The average of the measurements was 9.164 metres. The direction (strike) of the columns was measured as 209<sup>0</sup>. The start of the pier can be established from maps and photographs. The position is approximately marked by a blue plaque. The position of the start of the pier was calculated as Latitude 54.6180516, Longitude -1.05953, GR NZ60822517. From this data a 'reconstructed' pier with columns can be plotted on a map. Even with this reconstruction it was still not possible to relocate the position of all the beds in the Blake and Tate section that were referenced to pier columns.

### **Beds 44 and 45-53**

It did seem to be possible to locate Beds No. 44 and 45-53 in the Blake and Tate section. 44 was stated to form the "*surface of Stokesley Scar*", and 45-53 intersected "*Redcar Pier between the 6th and 9th columns on the west side*". The position of these beds could be established using a hand-held Geographical Positioning System (GPS). The approximate positions of the 6<sup>th</sup> and 9<sup>th</sup> pier columns could be determined given the position and orientation of the remaining column bases. In addition, Stokesley Scar can be recognised on the foreshore and was not covered by beach deposits. The actual descriptions of these beds in Tate and Blake are as follows-

Bed No.	Description	Ft	ins	Long Description	Location
44	<i>Cardinia</i> bank	0	3	A dense mass of <i>Cardinia Listeri</i> ct var hybrid, <i>Unicardium cardiodes</i> and <i>Gryphaea arcuata</i>	Surface of Stokesley Scar
45	Friable shale	0	7	<i>Eucyclus elegans</i> , <i>Lima pectinoides</i>	Stokesley Scar. These beds intersect the line of Redcar Pier between the 6 <sup>th</sup> and 9 <sup>th</sup> columns on the west side.
46	Friable shale and oyster-bed	0	4		
47	Friable shale and oyster-bed	0	8	<i>Dentalium etalense</i> , <i>Lima gigantean</i> , <i>Cardinia Listeri</i>	
48	Friable shale and oyster-bed	0	6	<i>L. gigantean</i> , <i>C. Listeri</i> , <i>Pentacrinus tuberculatus</i>	
49	Friable shale, with nodules and oyster-bed	0	8	<i>Am. bisulcatus</i> , <i>A. Charmasei</i> , <i>Eucyclus elegans</i> , <i>Pleurotomaria similis</i> , <i>P. concva</i> , <i>Turbo solarium</i> , <i>T. philemon</i> , <i>Pitonellus</i> , <i>Cryptaenia</i> , <i>Turritella Dunkeri</i> , <i>Actaeonina fragilis</i> , <i>Dentalium etalense</i> , <i>Myoconcha</i> , <i>Monotis inaequalis</i> , <i>Lucina</i> , <i>Ledae</i> , <i>Modiola hillanoides</i> , <i>M. bifasciata</i> , <i>cardita</i> , <i>Protocardium</i> , <i>Lima gigantean</i> , <i>L. pectinoides</i> , <i>Pecten textorius</i> , <i>Gryphaea arcuata</i> , <i>Rhynchonella plicatissima</i> (var.), <i>Ditrypa antiquate</i> , <i>Pentacrinus</i> , <i>Montlivaltia Guetardi</i> , <i>M. Haimeii</i>	
50	Friable shale and oyster-bed	0	4	<i>C. listeria</i> , <i>Lima pectinoides</i> , <i>Pecten textorius</i> , <i>Pentacrinus</i>	
51	Oyster-bank	0	1	<i>L. pectinoides</i> , <i>P. textorius</i> , <i>Pentacrinus</i> , <i>Cryptaenia solariodes</i>	
52	Stiff blue shale	0	9		
53	Line of blue limestone nodules	0	11/2		Base of Stokesley Scar

### How accurate is a cheap hand-held Geographical Positioning System?

A GPS calculates a position based on signals from satellites. It is important to understand that the satellites do not transmit positions. Positions are calculated by the GPS handset. The accuracy and precision of the position calculation produced by hand-held GPS does not vary much between models. The differences between hand-held models lie in the capabilities of the software and associated data that add value to the basic position calculation (e.g. quality of the user interface, quality of the maps, integration with other software etc). The position calculation produced by the most basic hand-held GPS is likely to be as precise and accurate as that produced by the most capable and expensive hand-held GPS that use standard GPS processing. Accuracy and precision can be improved by using enhanced GPS processing such as-

**Averaging**-Any calculated position will differ from the true position. Taking repeated measurements at the same position will produce a set of results that will be within an ellipse. The distribution of calculated positions in the ellipse will form a Normal Distribution. Averaging is calculating the modal value in that distribution. This technique therefore involves taking many readings for any required position and carrying out this calculation. It does not require a special or enhanced GPS model.

**Differential GPS**-This involves comparing a calculated position with a position calculated at a base station which is at a position that is accurately known at the same time. The error determined at the base station is used to correct the value at the required position. This technique obviously requires the base station, and the results calculated at the base station *at the same time* as the calculation at the required position.

**Wide Area Augmentation System**-This is similar to differential GPS. In this case correction data is sourced from geo-stationary satellites. This technique requires a GPS model that is capable of receiving and using the correction data.

**Carrier Wave Post Processing**-This involves complex processing of the radio signal from the satellites rather than simply using the data from the satellites. The properties of the radio signal and the data from the satellite are analysed. This requires a GPS model capable of accessing the raw properties of the signal and using this with the satellite data to calculate the position.

Standard GPS processing gives a result with a typical error of 6-8 metres.  
 Averaging can improve on this to produce results with an error of 3-4 metres.  
 Differential GPS can reduce the error to 1-5 metres.  
 Wide Area Augmentation System-can reduce the error to 3-7 metres.  
 Carrier Wave Post Processing-can reduce the error to less than 1 metre.

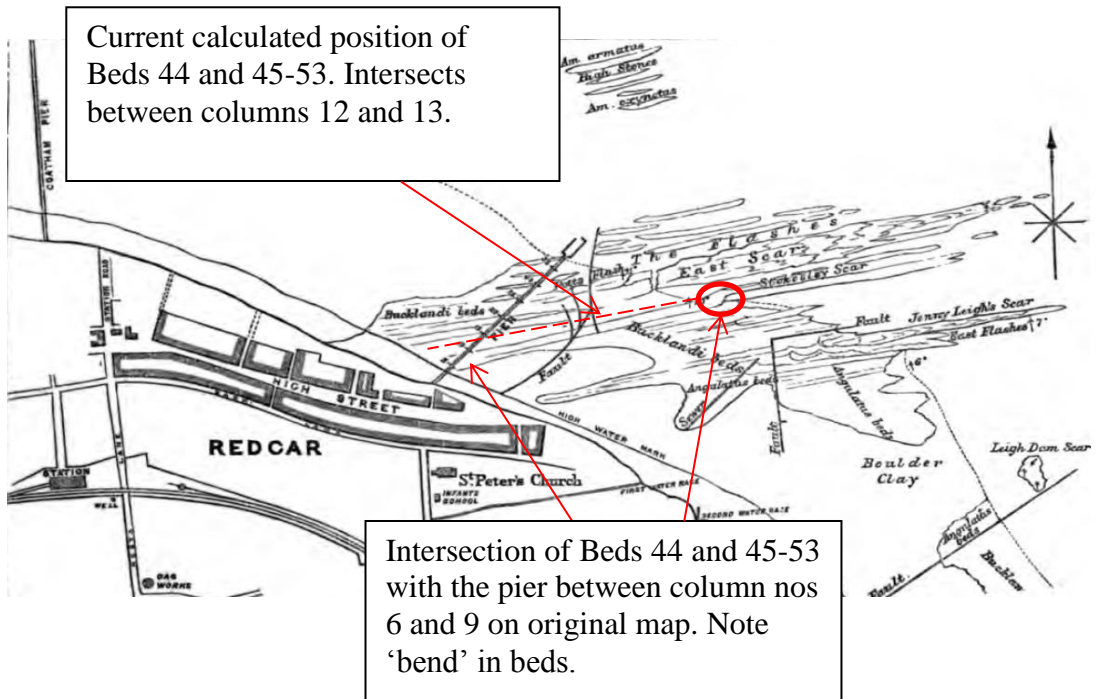
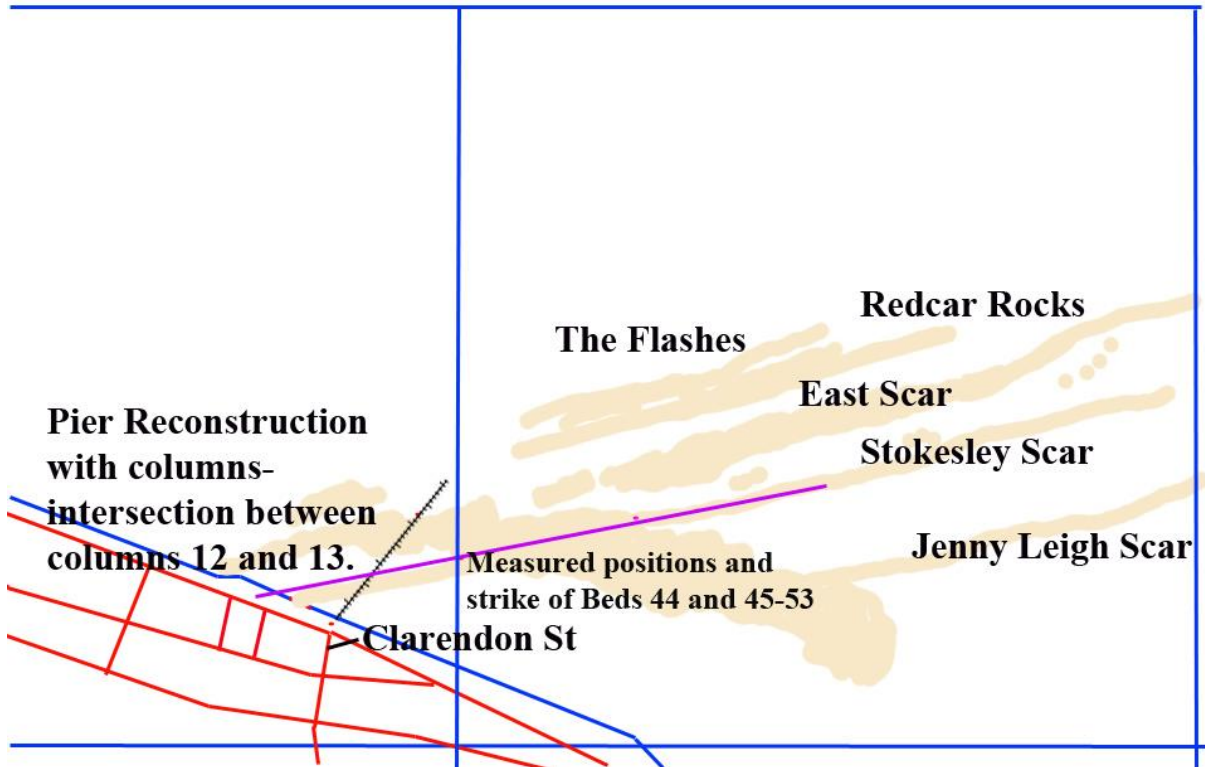
The degree of error is strongly influenced by the geometry of the satellites being used. Geometry describes the position of the satellites and their relative positions to each other and to the GPS device. A standard hand-held GPS can estimate the error produced by satellite geometry. This is reported by the device as the Estimated Dilution of Position/Precision (E)DOP. It is a guide to the accuracy of the calculation. DOP is a unit-less number where low values indicate a low dilution of precision and high values a high dilution of precision. Calculations of position should be carried out in conditions of low DOP which is normally defined as values less than 5. The lower the value the better the satellites positions for an accurate calculation of position.

The following position calculations were made on a bed consistent with the description of bed 44.

Latitude	Longitude	Grid Reference	DOP	satellite used/satellite in view
54.619337	-1.051737	NZ61332532	2.3	7/10
54.6192583	-1.05281833	NZ61262531	1.3	10/12
54.618773	-1.05662	NZ61012525	2.1	9/12

It is possible to calculate a compass bearing between latitude/longitude positions. The calculated bearing (strike) between these positions is 259<sup>0</sup>. This strike would mean the bed would intersect the 'reconstructed' pier approximately between columns 12 and 13. Blake and Tate described the beds intersecting the pier between columns 6 and 9. The reconstruction assumes that all the columns were the same width apart which may not have been the case. Blake and Tate provided a rough sketch map of the foreshore which shows a strange bend in the beds not seen in the field. These two observations could account for the discrepancy.





## Ammonite Zones and Subzones of Redcar Rocks

The strata that make up Redcar Rocks are zoned using ammonites. Fossil zonation is an approach well established in geology and was pioneered in the North Yorkshire Jurassic by Louis Hunton, using ammonites from Boulby Quarries in 1837. It is possible because ammonites evolved (and species became extinct) quickly and many species were geographically widespread. This means that species exist in restricted vertical (time) sequences of rock and can be used to classify those sequences over wide areas. The rocks forming Redcar Rocks have been split into three major zones

1. *Semicostatum* zone
2. *Bucklandi* zone
3. *Angulata* zone

The boundary between the *Angulata* and *Bucklandi* zones is important as it also marks the boundary between the major Jurassic stages Hettangian and Lower Sinemurian. These are two of the four internationally recognised standardised time stages of the Lower Jurassic and Redcar is one of the best exposures of this boundary in the UK. The boundary is defined by the first occurrence of ammonite genera *Vermiceras* and *Metophioceras* and is dated at 199.3 million years ago (mya).

Rawson and Wrights map places Beds 44-53 that form Stokesley Scar in the *Bucklandi* subzone above the *Rotiforme* subzone and below the *Semicostatum* zone.



Some of the ammonites can be very large. East Scar. *Bucklandi* Zone. Scale=15cms

The illustrations of the zonal and subzonal ammonites are taken from the following memoirs. These illustrations are worthy of reproduction simply as works of art as well as guidance to identification.

Wright, T., 1878, *The Liassic Ammonites*, Monograph of the Palaeontographical Society London

Quenstedt, Friedrich August., 1846-1849, *Petrefactenkunde Deutschlands*, Der Ersten Abthilung Erster Band, Cephalopoden

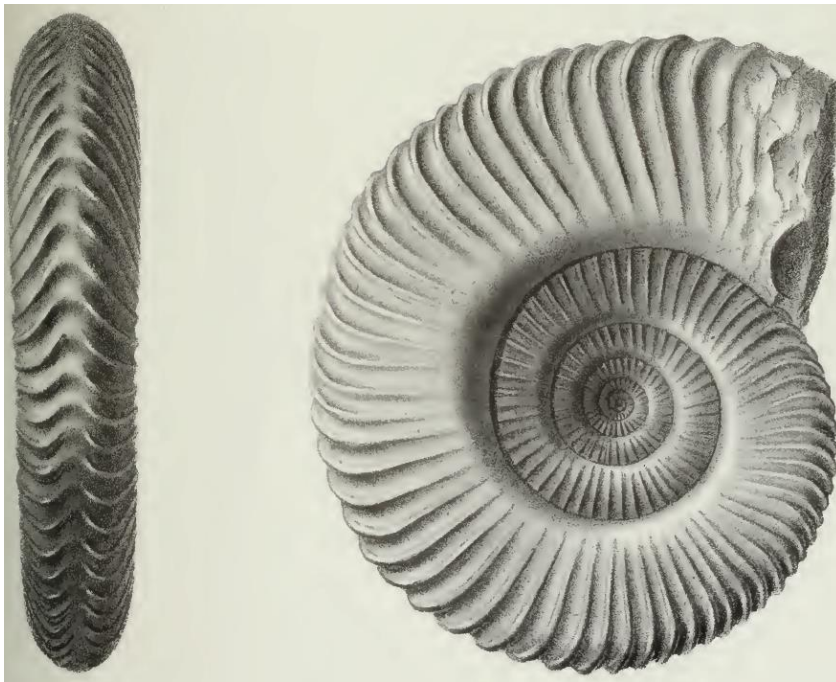
Quenstedt, Friedrich August, 1883-1885, *Die Ammoniten des Schwäbischen Jura*

von Zieten, Carl Hartwig Friedrich, 1830, *Die Versteinerungen Württembergs*, Stuttgart.

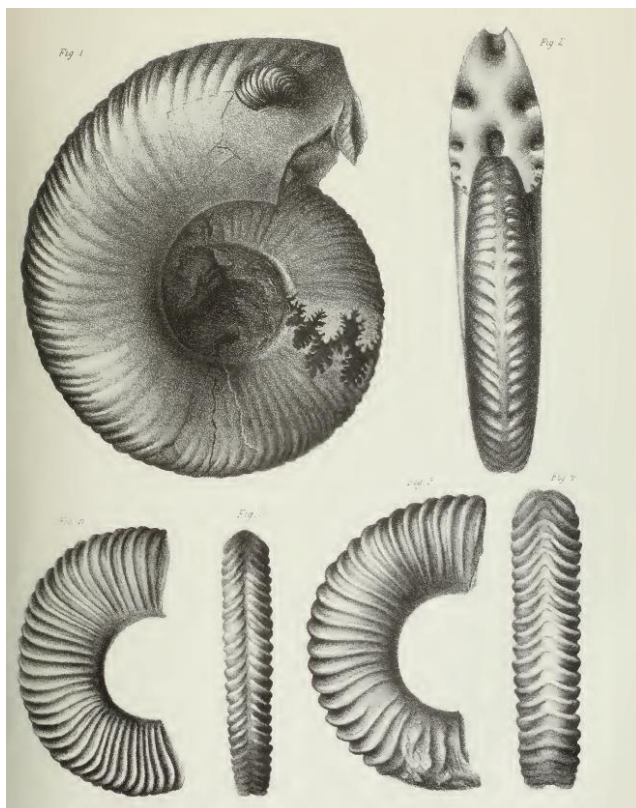
Wähner, Dr. Franz, 1882-98, *Beiträge Zur Kenntnis Der Tieferen Zonen Des Unteren Lias In Nordöstlichen Alpen*.

Stage	Ammonite Zone (Chronozone)	Ammonite Sub-Zone (Subchronozone)	Formations	Sub-formation
Lower Sinemurian	Arnioceras semicostatum (Semicostatum)	Euagassiceras resupinatum= sauzeanum (Sauzeanum)	Middle Redcar Mudstone	Calcareous Shale
		Agassiceras scipionianum (Scipionanum)		
		Coroniceras lyra (Lyra)		
Lower Sinemurian	Arietites bucklandi (Bucklandi)	Bucklandi		
		Coroniceras rotiforme (Rotiforme)		
		Vermiceras conybeari (Conybeari)		
Hettangian	Schlotheimia angulata (Angulata)	Schlotheimia depressa (Depressa)		
		Schlotheimia complanata (Complanata)		
		Schlotheimia extranodosa (Extranodosa)		

Hettangian-Angulata Chronozone-Middle Redcar Mudstone- Calcareous Shale  
Index-*Schlotheimia angulata*



Wright, 1879



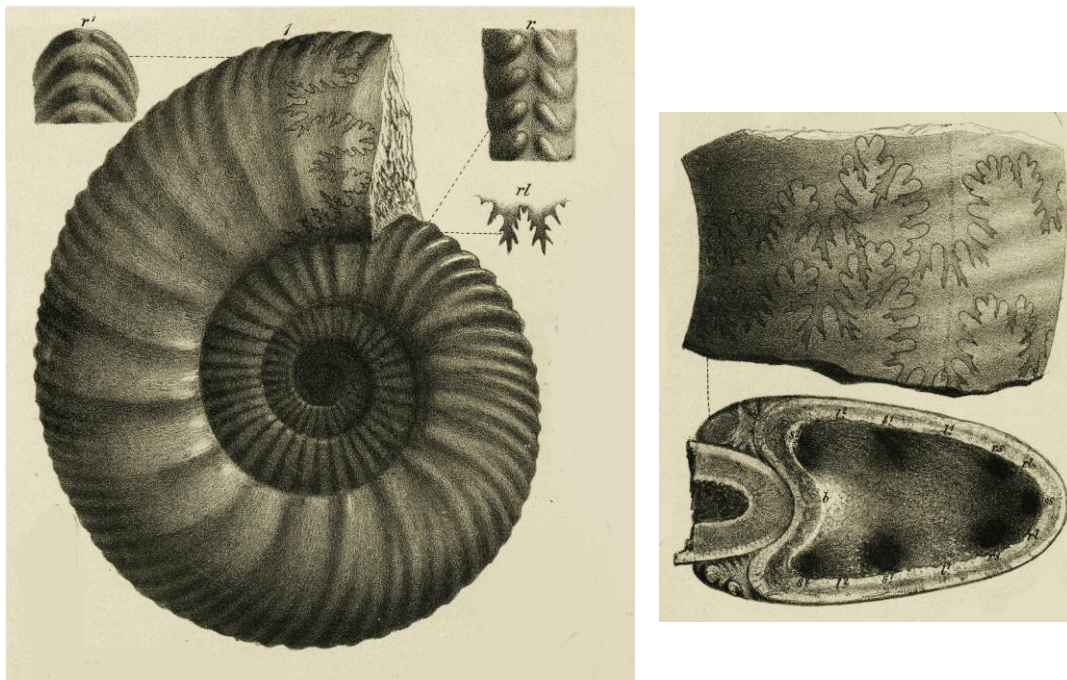
Wright, 1879  
(=*Ammonites moreanus*, d'Orbigny)



Hettangian-Angulata Chronozone-Depressa Subchronozone  
Index-*Schlotheimia depressa* (Wähler 1886).



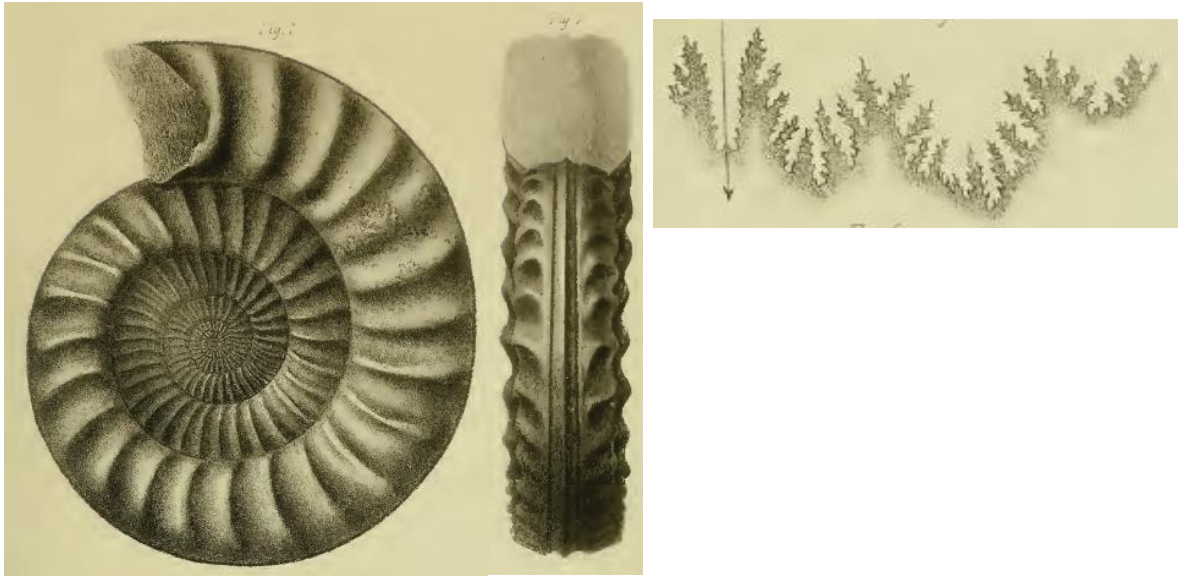
Zieten 1830 (=Ammonites colubratus)



Quenstedt 1883

**Lower Sinemurian-Bucklandi Chronozone- Middle Redcar Mudstone- Calcareous Shale**

***Index-Coroniceras (Arietites=Ammonites) bucklandi* (J. Sowerby 1818).**

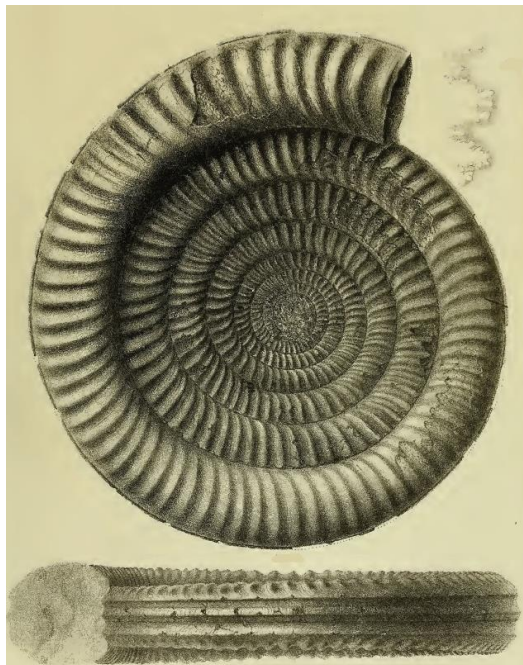


*Wright, 1879*

**Lower Sinemurian-Bucklandi Chronozone- Conybeari Subchronozone**

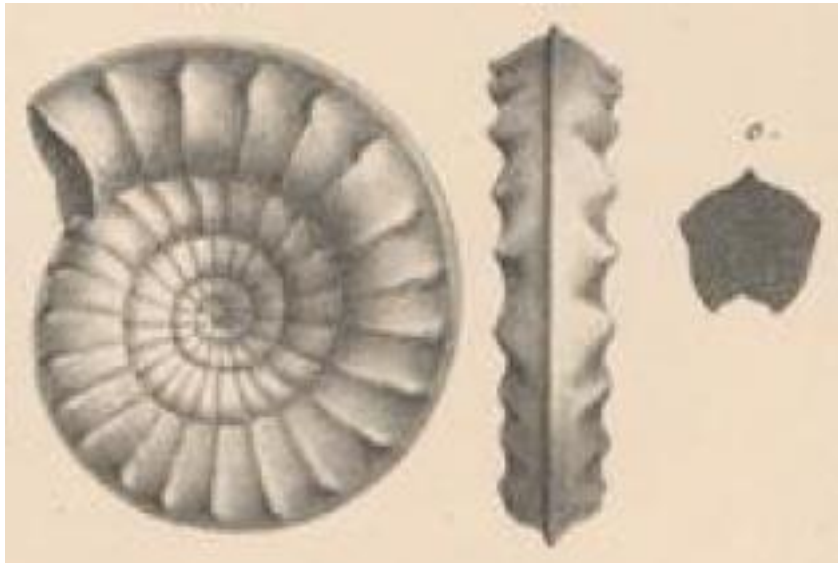
**Index. *Vermiceras (Metophioceras Coroniceras) conybeari* (J. Sowerby 1816).**

***Metophioceras (Coroniceras) conybeari* –Bull. BMNH**



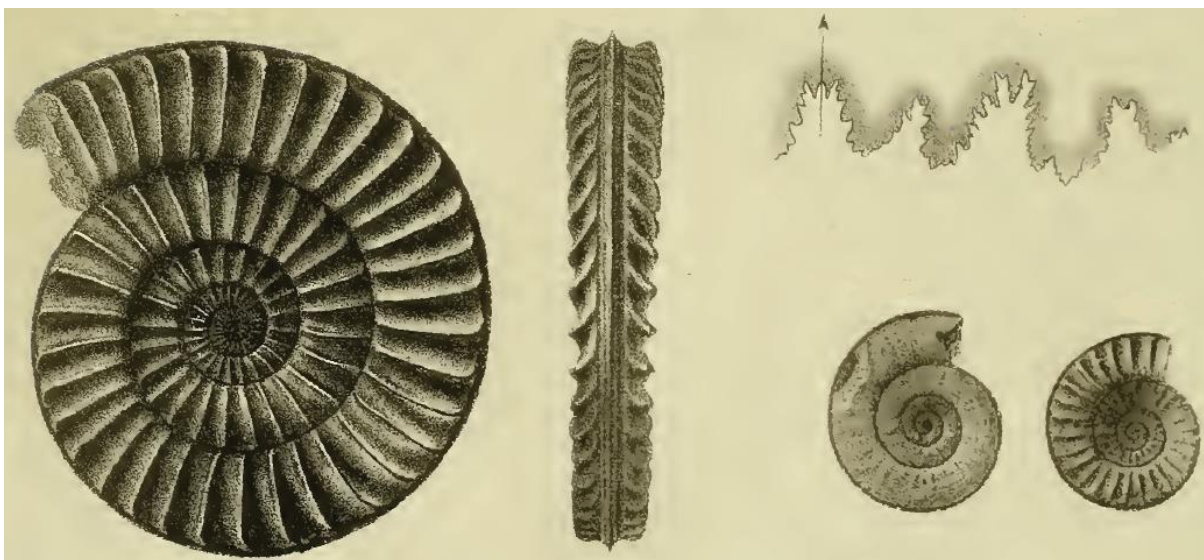
*Wright, 1879*

**Lower Sinemurian-Bucklandi Chronozone- Rotiforme Subchronozone**  
**Index-*Coroniceras rotiforme* (J. Sowerby 1816). =*Ammonites kridion* Zieten, 1830.**



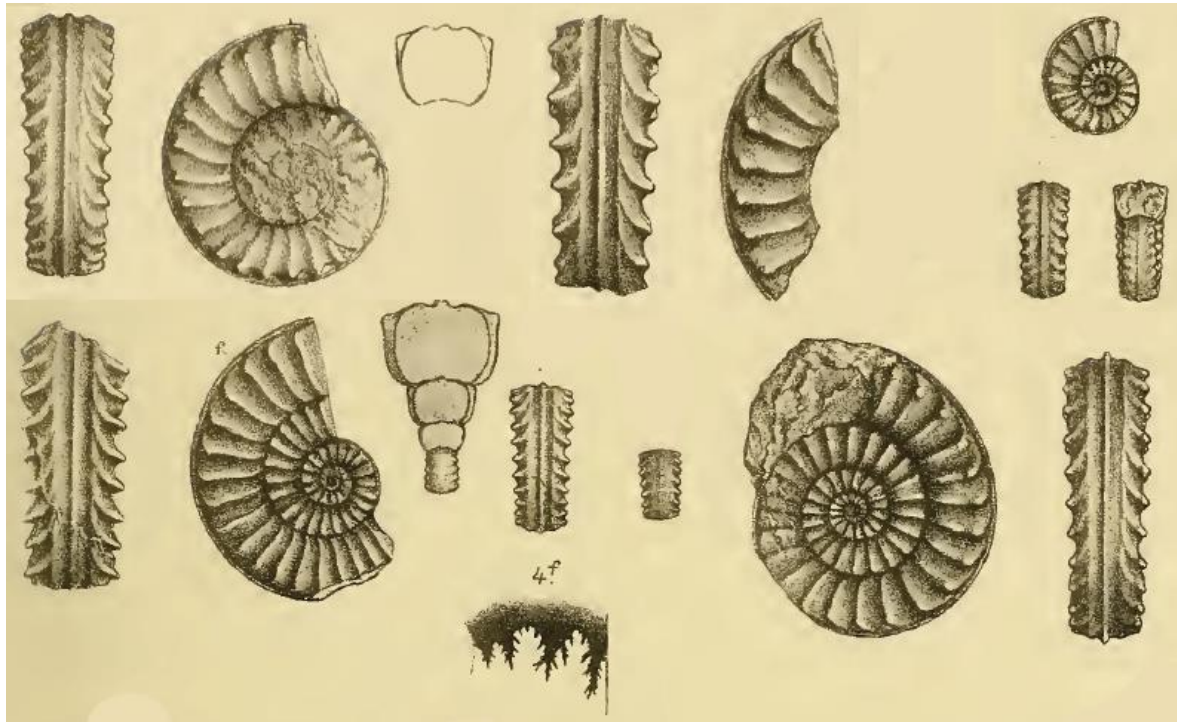
*Zieten 1830*

**Lower Sinemurian-Semicostatum Chronozone- Middle Redcar Mudstone- Calcareous Shale**  
**Index-*Arnioceras semicostatum***

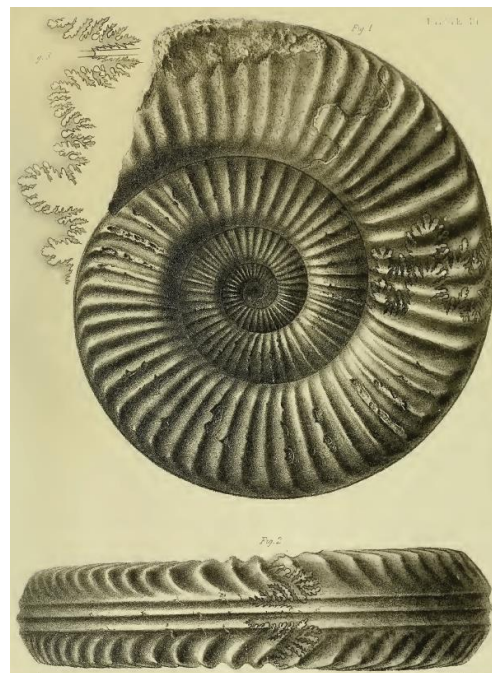
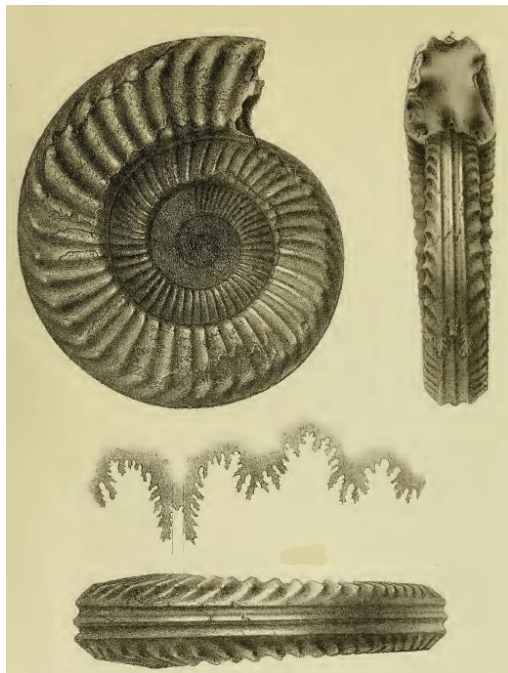


*Wright 1881*

Lower Sinemurian-Semicostatium Chronozone- Lyra Subchronozone  
Index-*Coroniceras lyra* (*multicostata/bisulcata*)

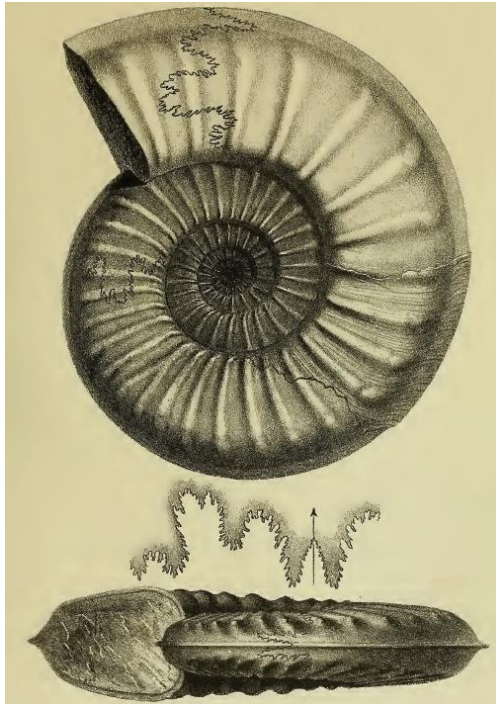


Wahner 1882\_98



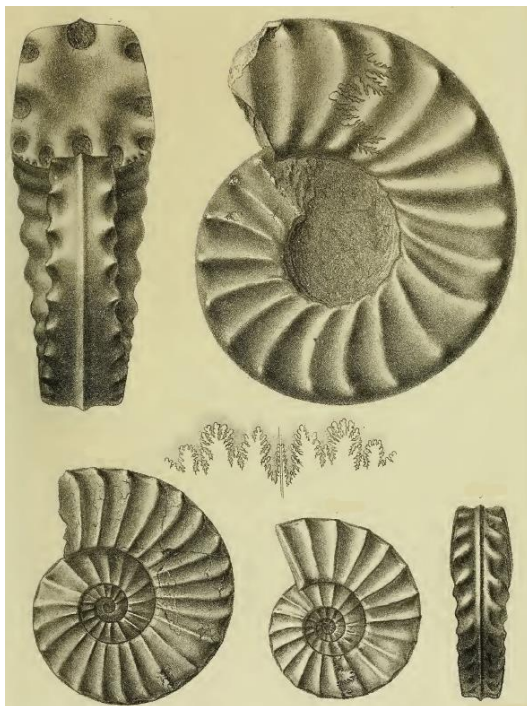
Wright 1881

**Lower Sinemurian-Semicostatium Chronozone-Scipionianum Subchronozone**  
**Index-*Agassiceras scipionianum***



Wright 1881

**Lower Sinemurian-Semicostatium Chronozone- Sauzeanum Subchronozone**  
**Index-*Euagassiceras resupinatum*= *sauzeanum***



Wright 1881

## References

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- Lord A., 'Revision of some Lower Lias Ostracoda from Yorkshire', Palaeontology, Vol. 14, Part 4, pp.642-665, 1971
- Page K.N., 'The Lower Jurassic of Europe: Its Subdivision and Correlation', Geological Survey of Denmark and Greenland Bulletin 1, 23-59, 2003
- Rawson P.F., Wright, 'The Yorkshire Coast', Geologists Association Guide, No. 34, 1992
- Simms M.J., Chidlaw N., Morton N., Page K.N., 'British Lower Jurassic Stratigraphy', Geological Conservation Review Series, No. 30, 2004
- Tate R., Blake J.F., 'The Yorkshire Lias', Van Voorst, London, 1876

## Field Meetings 2014

### Mobile Phone

The walk leader on the day carries the Club's mobile phone (**☎ 07826 787650**) that members may ring if necessary (to find the group if late arriving, for example).

I hope that you will find outings to your taste from this varied programme. Any suggestions for future outings are always welcomed by the committee. It is hoped that members will share transport, where possible, to ease any parking problems and be prepared to offer lifts to members without cars.

If you require further details about a walk, or in case of bad weather and possible cancellation, please contact the leader of the walk. Please bring suitable refreshment with you! This will be necessary for the walks that start on a morning and it may well be appropriate to take tea on an afternoon walk.

I should like to welcome any prospective members to join some of our outings. I am sure that you will find our members both friendly and helpful. I have found the field trips an excellent way of learning more about the natural history of the areas we visit.

Malcolm Birtle (President)

### **Unscheduled Adhoc Events**

Please note that, in addition to the scheduled walks included in this programme, our intention is to also have several adhoc events which necessarily have to be organised at short notice because they are highly dependent on suitable weather conditions. These include moth trapping with Paul Forster, slugs and snails with Tony Wardhaugh and possibly some other specialist interests. If you are interested in events such as these, please let Eric Gendle have your contact details and he will ensure you are kept informed about them as and when they are arranged.

#### **Wednesday, 9th April, 10:30 am, leader Eric Gendle ☎ 01642 281235**

GR NZ186609. **Derwent Valley Country Park.** Meet in Winlaton Mill car park. A there and back walk of variable length, mostly on the level, along an old railway track on a mainly tarred surfaced footpath. This walk offers typical old railway habitats and circles a lake. A minor diversion with a slight descent goes to a small lake with a bird hide, reed beds and meadows. A high spot of the walk (apart from red kites overhead and superb views from two high level bridges) is that lunch will be very close to a fish and chips shop in Rowlands Gill.

#### **Saturday, 12th April, 10:30 am, leader Colin Chatto ☎ 01642 599616**

GR NZ575849. **Rievaulx.** Meet at the entrance to Rievaulx Abbey. A circular walk of 5 miles.

#### **Wednesday, 16<sup>th</sup> April, 10:30 am, leader Ian Lawrence ☎ 01642 828858**

GR NZ428158. **Preston Park.** Meet in the car park. This will be a gentle relaxing day at Preston Park to enjoy the beautiful spring flowers in Quarry Wood and by the banks of the river Tees. There is a café in the park grounds for anyone wishing to take lunch there.

#### **Wednesday, 30th April, 10:30 am, leader Mark Stokeld ☎ 01642 783819**

GR NZ506231. **Saltholme Wildlife Reserve.** Meet in the visitor centre car park, which is free to RSPB members but with a small charge for each car otherwise. The entrance is just off the A178 Port Clarence to Seaton Carew road, about 1.5 miles north of Port Clarence. We expect to have a mix of (early) summer residents and passage migrants, as well as the chance of some interesting botany.

#### **Wednesday, 7th May, 2:30 pm, leaders Joan and Norma ☎ 01429 268416**

GR NZ455323. **Elwick Ghyll.** Meet on Elwick village green. There is parking for a few cars beside The Spotted Cow pub. A leisurely walk of about 3 miles on field paths.

#### **Wednesday, 14th May, 10:30 am, leader David Smith ☎ 01642 711233**

GR NZ605092. **Kildale to Gribdale.** Meet at the west end of Kildale village. A 6 mile circular walk with a particular emphasis on lichens.

#### **Saturday, 17th May, 10:00 am, contact Mick Carroll ☎ 01751 476550**

GR unknown. **Forge Valley National Nature Reserve, Scarborough.** This is the YNU VC 62 meeting. There are no further details available at the time of going to print. Please phone the contact if you are interested.

#### **Sunday, 18th May, 10:30 am, leader Malcolm Birtle ☎ 01642 649938**

GR NZ418132. **Yarm Aislaby Newsham.** Meet outside the Blue Bell on the north side of Yarm bridge. A fairly long walk along the riverbank but with only a little climbing.

**Wednesday, 21st May, 10:30 am, leader Peter Waterton ☎ 01642 724270**

GR SE968911. **Hackness** area. Meet in the car park at the grid reference. A circular walk of about 8 miles with some climbs.

**Wednesday, 28th May, 10:30 am, leader Vic Fairbrother ☎ 01287 633744**

GR SE725872. **Spaunton Quarry**. Meet at the start of the quarry footpath on Headlands Road, Appleton le Moors. A leisurely exploration of this limestone site should reveal lots of botanical interest and hopefully some butterflies. This is a repeat of last year's walk hoping for better weather.

**Sunday, 1st June, 10:30 am, leader Martin Allen ☎ 01642 576295**

GR NZ689139. **Moorsholm** area. Park on the road verge at the south end of Moorsholm. A walk of about 5 miles through ancient woodland, moorland and farmland, with some steep slopes.

**Wednesday, 4th June, 6:30 pm, leader Andy Ferguson ☎ 01642 311831**

GR NZ653157. **Margrove Park** area. The meeting place is in the old shale tip car park on the west side of the road opposite the entrance to the caravan park at Margrove.

**Thursday, 5th June, 10:30 am, leaders Margaret and Graham Boyd ☎ 01287 657203**

GR NY907283. **Teesdale**. Meet in the Bowlees car park. We will visit both Gibsons Cave and Low Force. A leisurely walk with just a little climbing.

**Sunday, 8th June, 10:30 am, leader Andy Astbury ☎ 01642 823114**

GR NZ892025. **Commondale** circular. Meet outside the Cleveland Inn. There is limited roadside parking in Commondale. A walk of about 8 miles, some of it strenuous.

**Wednesday, 11th June, 10:30 am, leader David Laing ☎ 01642 316101**

GR NZ453223. **Billingham Beck Valley Country Park**. Meet in the visitor centre car park. A leisurely full day to explore this interesting wetland area.

**Sunday, 15th June, 10:30 am, leader Colin Chatto ☎ 01642 599616**

GR NZ980016. **Ravenscar to Boggle Hole**. Meet near the National Trust Information Centre at Ravenscar. A walk of about 7 miles along the rocky shoreline to Boggle Hole and back along the Cleveland Way or old railway line. It may be possible to leave some cars at Boggle Hole for those who only want to do either half of the walk.

**Wednesday, 18th June, 6:30 pm, leader Eric Gendle ☎ 01642 281235**

GR NZ475114. **Brewsdale**. Meet in Hilton village. The village hall car park has room for 4 cars, otherwise roadside parking. A gentle walk, with about 100 ft of descent, to explore Brewsdale

**Saturday, 21st June, 10:30 am, leader Daphne Aplin ☎ 01642 884719**

GR NZ161315. **Low Barns**. Meet in the visitor centre car park. Low Barns is a valuable wetland reserve and a most important wildlife site. The terrain is flat and there are some excellent bird hides.

**Wednesday, 25th June, 1:30 pm, leader Jo Scott ☎ 01642 897843**

GR NZ444167. **Bowesfield Nature Reserve**. Access is from the main Stockton to Ingleby Barwick road. From Stockton, turn left at the second roundabout; from Ingleby Barwick, this



is the one after the bridge over the Tees. Parking is at the end of the road just past the Archers Law building. An easy walk around this TVWT nature reserve.

**Wednesday, 2nd July, 10:30 am, leader Jo Scott ☎01642 897843**

GR NZ479254. **Cowpen Bewley Woodland Park.** Meet at the visitor centre for an easy walk around the reserve. We will be collecting grasses to identify in the afternoon.

**Wednesday, 9th July, 6:30 pm, leader Malcolm Birtle ☎01642 649938**

GR NZ640226. **Marske Sandhills.** Meet outside St. Germain's Church in Marske by the Sea. We will explore the sandhills in detail. There is easy walking on the hill tops and on the beach. Alternatively, there is more strenuous, but not difficult, walking in the hills themselves.

**Wednesday, 16th July, 6:30 pm, leader Malcolm Birtle ☎ 01642 649938**

GR NZ376235. **Stillington.** Meet in the car park next to the church. An easy walk.

**Sunday, 20th July, 10:30 am, leader Bill Hall ☎ 01642 823170 or 07753 663589**

GR SE369630. **YWT Staveley Nature Reserve.** Meet in the YWT car park on the Minskip Road just outside Staveley village. This joint meeting with the YDS has a focus on dragonflies and damselflies. A total of 22 species have been recorded at this reserve.

**Wednesday, 23rd July, 1:30 pm, leader Vincent Jones ☎01642 722814**

GR NZ541132. **Eastfield Farm, Nunthorpe.** Park in Nunthorpe (old village), where there is plenty of room near Hall Farm. We have been given special permission to visit several man made pools of a decent size that contain some interesting plants. An easy circular walk of 2 miles.

**Saturday, 26th July, 10:30 am, leader Eric Gendle ☎ 01642 281235**

GR SE965944. **Whisperdales.** Meet in Reasty Bank car park. A walk of about 7 miles, descending gently into Whisperdales, before climbing out to Silpho, via a rich disused quarry, then returning via Silpho Brow and Swarth Brow woodland.

**Sunday, 27th July, 09:30 am, leader John Money ☎ 07768 307332**

GR NZ585250. **Coatham Marsh and South Gare.** Meet in the Coatham Marsh car park. Later in the day we will take the cars down to South Gare. This is a joint meeting with the Yorkshire Branch of Butterfly Conservation and the target species for the day are Grayling and Dark Green Fritillary. An easy gentle walk of just a few miles.

**Wednesday, 30th July, 6:30 pm, leader Malcolm Birtle ☎ 01642 649938**

GR NZ418132. **Hardwick Dene and Elmwood.** Meet at the entrance on Darlington Lane. Cars may be parked in streets around The Vale (NZ424203). An easy stroll along footpaths.

**Wednesday, 6th August, 6:30 pm, leader Neil Baker ☎ 01325 361547**

GR NZ588231. **Foxrush Farm.** Meet in the community woodland car park off Kirkleatham Lane. An easy walk to see how this woodland has developed since planted in 1997.

**Sunday, 10th August, 10:30 am, leader Neil Baker ☎ 01325 361547**

GR NZ395165. **Coatham Stob.** Meet in the car park off the road between Longnewton and Urlay Nook. A leisurely day exploring this site, which is good for birds, butterflies and

dragonflies. We will look at the new series of ponds, as described to us by Graeme Skinner in his talk last winter.

**Wednesday, 27th August, 11:00 am, leader Jo Scott ☎ 01642 897843**

GR NZ810160. **Runswick Bay.** Meet by the café at the bottom of the hill. There is a small beach car park close by and a larger one opposite the Cliffmount Hotel in Bank Top Lane. Both are pay and display. A day (weather permitting) exploring the rock pools and fossils at Runswick Bay. Please bring a net and small bucket if you can.

**Saturday, 30th August, 11:00 am, leader Denis Goldring ☎ 01642 477484 (Alan Simkins)**

GR NZ899115. **Whitby to Sandsend.** Meet at the bandstand near the west pier. This is a joint meeting with the Tees Valley RIGS Group. A one way walk which will allow the Jurassic and Quaternary (glacial and post glacial) geology to be seen. The return will be by bus from Sandsend.

**Sunday, 7th September, 10:30 am, leader Andy Astbury ☎ 01642 823114**

GR NZ477020. **Swainby Circular.** Meet by the church in Swainby, where there is ample roadside parking. A circular moderate walk of about 8 miles but with some stiff climbs.

**Wednesday, 24th September, 10:30 am, leader Aubrey Colling ☎ 01609 882339**

GR NZ452934. **Over Silton.** Meet in the village, where there is adequate parking. A fungus foray, mostly on woodland paths.

**Saturday, 18th October, 11:00 am, leader Alan Simkins ☎ 01642 477484**

GR NZ708093. **Danby.** Meet at the grid reference where there is limited roadside parking. A joint fungus foray with the NEFSG on open moorland and in private woodland and fields.

### **Websites**

Members with access to the world wide web will find the following sites of interest. These sites contain excellent links to many other sites with a natural history theme. Fresh material for inclusion on our Club website is always welcomed.

<http://www.clevelandnats.org.uk>

[www.the-vasculum.com](http://www.the-vasculum.com)

<http://www.davebarlow.co.uk>

<http://www.ynu.org.uk>

<http://www.nhsn.ncl.ac.uk/>

<http://www.dtnfc.org/>

### **DATES FOR WINTER MEETINGS 2014-2015**

Sep 29. Oct 20, 27. Nov 17. Dec 15. Jan 26. Feb 16, 23. Mar 16, 30.