CLEVELAND NATURALISTS'

FIELD CLUB

RECORD OF PROCEEDINGS

Volume 11 Part 1 **Spring 2015**

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THE OFFICERS & COMMITTEE 2015-2016

President.	Malcolm Birtle, 10 Avon Grove, Billingham, TS22 5BH., .
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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 Address

The 2014 field season was notable for the fine weather that blessed our meetings. I believe it is the first year that I have not been soaked on any occasion. The field excursions in Durham and North Yorkshire produced many highlights which are documented in these Proceedings. A developing feature of the field meetings is joint working with other groups which in 2014 included the Tees Valley Regionally Important Geological Sites group, Butterfly Conservation, Yorkshire Naturalists' Union, North-east Fungus Group and Yorkshire Dragonfly group. For the first time all our biological records made at outdoor meetings were submitted to the North East Yorkshire Ecological Data Centre and the Environmental Records Information Centre for the North East of England. In addition to the decision to start submitting biological records the committee decided that a focus would be placed on studying a specific site in 2015. The site chosen is North and South Gare and work has started to acquire historical data and basic habitat maps.

The committee also decided that the Club needed to make more effort in publicity and recruitment. To this end some exhibition boards have been acquired and are currently being populated with suitable materials for display at appropriate events. Club business cards were also produced to advertise the Club and website. An issue of the Proceedings has been produced which adds to the archive which is an important advertisement for the activities of the Club. The website contains a great deal of interesting material in addition to the Proceedings. Many thanks to all contributors to the website. Further contributions are always welcome.

There has been another successful Winter programme with a series of excellent speakers on a variety of topics. Andrew Grayson brought Bot and Warble Fly species to our attention, Tony Devos gave us an update on the Limestone Landscapes project in County Durham, Don Griss spoke about Winter Wildfowl, Brian and Ann Hague gave us a delightful tour of some Mediterranean Islands, and Norman Thompson impressed us all with his knowledge of the British Saxifrages. We look forward to hearing from our immediate Past President Vic Fairbrother on the Rosedale Ring Cycle, and Colin Scrutton on Orchids at the remaining Winter meetings. Joan Bradbury ably assisted by Norma Pagdin provided an excellent Christmas entertainment. Members Night provided an opportunity to examine displays, specimens and images produced by individuals in the Club. Pleasingly, the room was filled with examples and short presentations were given by Jo Scott demonstrating the utility of the new hand held underwater cameras, Paul Forster illustrated the joys of organised wildlife photography, and Alan Simkins outlined the Lewis Hunton Project. Grateful thanks are extended to all contributors to these meetings.

Many thanks to all the officers of the Club, and all members that have contributed to its' activities throughout the year.

It is very important to realise that the Club is the members, and all the achievements of the Club are achievements of all the members. We can congratulate ourselves on another successful year and lets look forward to a stimulating and active new year.

Highlights of 2014 Field Meetings

Wednesday, 9th April, 10:30 am, leader Eric Gendle GR NZ186609. Derwent Valley Country Park.

The party of 8 left the Winlaton Car Park on a pleasant spring day. The walk followed old railway tracks for most of the way and often skirted the river Derwent. Spring woodland flowers such as *Tussilago farfara* (Coltsfoot), *Primula vulgaris* (Primroses), *Hyacinthoides non-scriptus* (Bluebells), *Petasites hybridus* (Butterbur), *Oxalis acetosella* (Wood-sorrel) and *Anemone nemorosa* (Wood Anemones) were coming into bloom, whilst patches of naturalised *Narcissus sp* (Daffodils) could be seen. Walking round Clockburn Lake produced little of interest though Sand Martins and Swallows were flying overhead, but 3 Roe Deer were seen grazing in the woodland on Goodshields Haugh. We then reached Nine Arches Viaduct a well-known Red Kite (*Milvus milvus)* viewing point especially for the evening roost. We walked along the woodland track, passing ruins of former industry, all the time hearing and sometimes seeing Chiffchaffs (*Phylloscopus collybita)*, Willow Warblers (*Phylloscopus trochilus)*, Chaffinchs (*Fringilla coelebs)* Blackcaps (*Sylvia atricapilla)* Robins (*Erithacus rubecula)*, Great Spotted and Green Woodpeckers *(Dendrocopus major)* and (*Picus viridus)*, Jay (*Garrulus glandarius)* and Nuthatches (*Sitta europaea)*. We finally emerged into Rowlands Gill for the promised fish and chips lunch stop. After lunch we walked on a little further to a second viewing point on Rowlands Gill Viaduct, but we were unable to add to our raptor total of many Kites (*Milvus milvus)*, 2 Sparrow Hawks (*Accipiter nisus)* and a Kestrel (*Falco tinnunculus)*. Looking into the river below a Goosander (*Mergus merganser)* could be seen. We retraced our steps with a diversion to Far Pasture Lake and bird hide where we were rewarded with fly pasts of two Kingfishers (*Alcedo atthis)* and two more grazing roe deer. The walk ended with a gentle stroll back over Nine Arches Viaduct and back to the cars

Silpha atrata (Black Snail Beetle) was seen on the track at NZ182603.

Saturday, 12th April, 10:30 am, leader Colin Chatto GR NZ575849. Rievaulx.

Eight members met at Rievaulx Abbey car park on a cool cloudy day with a little rain later.
Some of the plants noted were Toothwort (*Lathraea squamaria)*, Moschatel (*Adoxa moschatellina*,) early Bluebells (*Hyacinthoides non-scripta*) and a lot of Water Cress

(*Rorippa nastertium-aquaticum)* (eaten by one member, - but not all of it!). Of the birds, we had good views of two separate Willow Tits (*Poecile montana)* and saw a Eurasian Treecreeper (*Certhia familiaris)*. Some of us heard Blackcap (*Sylvia atricapilla)*, Chiffchaff (*Phylloscopus collybita)*, Great Spotted Woodpecker *Dendrocopus major*, Green Woodpecker (*Picus viridis)*, Coal Tit (*Parus ater*) and Nuthatch (*Sitta europaea)*. Other creatures of note were Pill Millipede (*Glomerus marginata)*, Silky Snail (*Monacha granulate)* (formerly *Ashfordia granulata*), Door Snail (*Clausilia bidentata*), Rounded Snail (*Discus rotundatus)* and Copse Snails (*Arianta arbustorum)*. A large Ammonite fossil was discovered in the open by Malcolm. A coral coloured slime mould was seen quite high up on a dead tree trunk. Our tallest member, Neil, managed to dislodge it and it was later identified as *Tubulifera arachnoidea.* Some of us, taking a different way back, saw traps fixed to tree branches, which we presumed were part of a Harvest Mouse (*Micromys minutus)* survey known to be taking place in this area.

Wednesday, 16th April, 10:30 am, leader Ian Lawrence GR NZ428158. Preston Park.
A fairly large party met in the park and meandered slowly for a short botanical study through the woods behind the Hall to the riverbank, and back. A long list of plants was produced that included *Buxus sempervirens* (Box), *Cornus sericea* (Red Osier Dogwood), *Daphne laureola* (Spurge Laurel), *Oenanthe crocata* (Hemlock Water Dropwort), *Ranunculus auricomus* (Goldilocks), *Ulmus procera* (English Elm) and *Taxus baccata* (Yew). A notable bird observed was *Poecile montana* (Willow Tit) which is becoming a rarity these days. *Bombylius major* (Beefly), *Aglais io* (Peacock) and *Pararge aegeria* (Speckled Wood) were also active.

Wednesday, 30th April, 10:30 am, leader Mark Stokeld GR NZ506231. Saltholme Wildlife Reserve.
This was primarily a day of bird watching at the RSPB reserve. Notable species seen were *Branta leucopsis* (Barnacle Goose), *Anas strepera* (Gadwall), *Columba oenas* (Stock Dove), *Egretta garzetta* (Little Egret) and *Passer montanus* (Tree Sparrow). *Helophilus pendulus* (Hoverfly), *Bibio marci* (St Mark's Fly), and *Pieris napi* (Green-veined White) were feeding on various flowers.

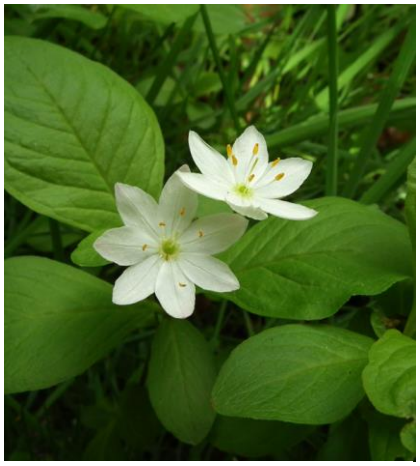
Wednesday, 7th May, 2.30pm, leaders Joan and Norma GR NZ455323. Elwick Ghyll.
The party met in Elwick village and proceeded to walk to Dalton Piercy and back. Time was spent inspecting the Ghyll which contains Char Beck which revealed *Primula veris (*Cowslip) and *Primula vulgaris (*Primrose). At the east end of the village, near Home Farm, *Lycium barbarum (*Duke of Argyll's Tea Plant) was found.

Wednesday, 14th May, 10:30 am, leader David Smith and Jo Scott GR NZ605092. Kildale to Gribdale.
On a beautiful day 17 members attended a lichen foray. Leaving Kildale along the road in an easterly direction, a 6 mile circular walk took us past Kildale Hall then left over the railway to pass New Row, alongside the woods on the southern slopes of Kildale Moor to the Percy Cross Rigg road. We followed the road north west, through the gate then took the path west down to Gribdale Gate leaving the main track on an indistinct path to traverse round the hill to the old quarry. From Gribdale Gate, instead of taking the main path directly up to the monument, we took the track through the woods alongside a wall. This track eventually joins the Cleveland Way and turning left we followed this to the Kildale road. On joining the road we turned right to pass Bankside Farm for the return to Kildale.

In addition to noting 52 species of lichen we also recorded *Ophioglossom vulgatum* (Adderstongue Fern) by the side of the Percy Cross Rigg road, spotted 2 Cuckoos (*Cuculus canorus*) and found *Trientalis europaea* (Chickweed Wintergreen) and an Emperor moth (*Saturnia pavonia*) on the Cleveland Way between Captain Cook's Monument and the Kildale Road. Several fern gametophytes, probably of *Pteridium aquilinum* (Bracken), were found on a rotten conifer stump on Kildale Moor and a solitary pine tree nearby was later identified as *Pinus contorta* var. *contorta*. See below for full details under 'The Kildale Lichen Walk'.

Zicronc *Ophioglossom vulgatum* ug)
Adders Tongue Fern

Saturnia pavonia
Emperor Moth



Trientalis europaea
Chickweed Wintergreen

Saturday, 17th May, 10:00 am, Forge Valley National Nature Reserve, Scarborough.
The report for this meeting was published in the *Naturalist* December 2014, p221-2;.

Sunday, 18th May, 10:30 am, leader Malcolm Birtle GR NZ418132. Yarm Aislaby Newsham.
A small party set out from the Bluebell and walked upstream on the North bank of the River Tees to Newsham Bank, returning along the road to Aislaby. The most notable observation was the number of *Calopteryx splendens* (Banded Demoiselle) flying amongst the

riverbank vegetation. Acompanying them were *Aglais urticae* (Small Tortoiseshell), *Anthocharis cardamines* (Orange Tip), *Lasiommata megera* (Wall), *Pararge aegeria* (Speckled Wood) and *Pieris napi* (Green-veined White). *Daphne laureola* (Spurge Laurel) was noted on the roadside to Aislaby.

Wednesday, 21st May, 10:30 am, leader Peter Waterton GR SE968911. Hackness.
After parking at Bell Heads we walked through Hilda Wood to Silpho, then to Broxa, past Bridge Farm to Estell Lane and back to Hackness. A good selection of butterflies were noted- *Anthocharis cardamines (*Orange Tip), *Erynnis tages (*Dingy Skipper), *Lasiommata megera (*Wall), *Lycaena phlaeas (*Small Copper), *Pararge aegeria (*Speckled Wood), *Pieris napi (*Green-veined White) and *Vanessa atalanta (*Red Admiral). The woods contained a number of *Orchis mascula* (Early Purple Orchid).

Wednesday, 28th May, 10:30 am, leader Vic Fairbrother GR SE725872. Spaunton Quarry.
Cancelled due to bad weather.

Sunday, 1st June, 10:30 am, leader Martin Allen GR NZ689139. Moorsholm.
We walked down Cow Close Lane to the woods, through the woods, and back across the fields to the North end of the village. It was a pleasure to find *Epipactis helleborine* (Broad-leaved Helleborine) in the Lane. It was a reasonable day for Lepidoptera turning up *Opisthograptis luteolata* (Brimstone Moth), *Abraxas sylvata* (Clouded Magpie) and *Aglais io* (Peacock) in the wood, with *Erynnis tages* (Dingy Skipper), *Petrophora chlorosata* (Brown Silver Line) and *Autographa gamma* (Silver Y) in unimproved pasture adjacent to the wood. It is interesting to note that Speckled Wood is now one of the most common butterflies we see on any of our excursions. *Populus tremula* (Aspen) and *Salix pentandra* (Bay Willow) were also found. *Laetiporus sulphurous* (Chicken in the Woods) was growing on a tree.

Wednesday, 4th June, 6:30 pm, leader Andy Ferguson GR NZ653157. Margrove Park.
The party spent a quiet summer evening wandering the reclaimed grassland and ponds on the site of the industrial remains in Margrove Park. There were plenty of *Dactylorhiza fuchsii* (Spotted Orchid) and *Dactylorhiza purpurella* (Northern Marsh Orchid) amongst the remains together with a varied flora typical of these regenerating industrial sites. It was heartening to see Roe Deer running around so close to habitation. *Ranunculus sceleratus* (Celery-leaved Buttercup) was found on the margin of the ponds.

Thursday, 5th June, 10:30 am, leaders Margaret and Graham Boyd GR NY907283. Teesdale.
The meeting took place at Bowlees Visitors Centre. The group examined the old quarry and then wandered across the fields to Low Force and a couple of the adjacent meadows which were in full bloom with some of the dales specialities *Alchemilla glabra* (Smooth Lady's-mantle), *Arabis hirsuta* (Hairy Rock Cress), *Neottia ovate* (Twayblade), *Pinguicula vulgaris* (Butterwort), *Primula farinose* (Birds Eye Primrose) and *Viola lutea* (Mountain Pansy) were all seen. The meadow contained a pure white variation of the Mountain Pansy.

Sunday, 8th June, 10:30 am, leader Andy Astbury GR NZ892025. Commondale.
A small party set out from the church car park on the hill towards White Cross. We were saddened to find a dead *Vipera berus* (Adder) on the road. Walking across to Siss Cross

we encountered the usual moorland species. After refreshing at the Duke of Wellington we wandered along the Esk Valley through Danby Park, past Box Hall and back to Commondale.

Wednesday, 11th June, 10:30 am, leader David Laing GR NZ453223. Billingham Beck Valley Country Park.

The party met at the Ecology Park which is a reclaimed landfill site. The flora was found to be very varied and of great interest and included *Ophrys apifera* (Bee Orchid). The pond also holds many interesting species. We left the Ecology Park and visited the wet meadows and beck downstream where we saw the Kingfisher (*Alcedo atthis*) and some Treecreepers (*Certhia familiaris*). Quite a lot of lepidoptera were busy including *Aglais io (*Peacock), *Aglais urticae (*Small Tortoiseshell, *Anthophila fabriciana (*Nettletap), *Lycaena phlaeas (*Small Copper), *Noctua pronuba (*Large Yellow Underwing), *Pararge aegeria (*Speckled Wood), *Polyommatus Icarus (*Common Blue) and *Vanessa atalanta (*Red Admiral).

Sunday, 15th June, 10:30 am, leader Colin Chatto GR NZ980016. Ravenscar to Boggle Hole.

Members walked down a steep path to the shore, along the foreshore to Boggle Hole, up to the dismantled railway line and back to Ravenscar. On the way down to the shore we saw well over 100 Grey Seals (*Halichoerus grypus)* on the rocks and in the sea. In some of the rock pools we saw Beadlet Anemones (*Actinia equine)* seemingly stretching down to feed instead of waiting for food to come to themwhen upright. In the soft cliffs there was a colony of Sand Martins (*Riparia riparia*) flying in and out of their nest holes. Malcolm told us about the special geology along this part of the coast which has been much studied in the past which is summarised below under 'Geology of the Ravenscar Foreshore'.

Wednesday, 18th June, 6:30 pm, leader Eric Gendle GR NZ475114. Brewsdale.

Brewsdale produced little of recorded interest apart from a mature *Libellula depressa* (Broad-bodied Chaser), which perched for some time in the evening sun allowing ample time for examination and photographs. All of the mollusc species found are widespread and at least quite common. The most interesting is *Cochlodina laminata* (Plaited Door Snail). Found in the Scriddles Wood area at Brewsdale, it shows some association with old woodland at least locally. *Maniola jurtina* (Meadow Brown) and *Aphantopus hyperantus* (Ringlet) were also noted.

Saturday, 21st June, 10:30 am, leader Daphne Aplin GR NZ161315. Low Barns.
Members met on a warm, sunny day at the Durham Wildlife Trust Reserve. After watching from a hide they circumnavigated the reserve, exploring the ponds, riverside and woodland. There were plenty of birds and lepidoptera in flight including *Sitta europaea (*Nuthatch), *Dendrocopos major (*Great Spotted Woodpecker), *Emberiza schoeniclus (*Reed Bunting), *Cinclus cinclus (*Dipper), *Aphantopus hyperantus (*Ringlet), *Lycaena phlaeas (*Small Copper), *Maniola jurtina (*Meadow Brown), *Ochlodes sylvanus (*Large Skipper), *Pararge aegeria (*Speckled Wood), *Cabera pusaria (*White Wave), *Camptogramma bilineata (*Yellowshell), *Hypena proboscidalis (*Snout), *Odezia atrata (*Chimney Sweeper), *Opisthograptis luteolata (*Brimstone Moth), *Scotopteryx chenopodiata (*Shaded Broad Bar and *Xanthorhoe montanata (*Silver Ground Carpet). *Lilium martagon (*Turks Head Lily) was an interesting encounter.

Wednesday, 25th June, 1.30pm, leader Jo Scott GR NZ444167. Bowesfield Nature Reserve.
Members met on the edge of Preston Farm Industrial Estate and were rewarded immediately by interesting plants and insects. We walked towards the river past recently excavated ponds. It was notable that *Calopteryx splendens* (Banded Demoiselle) was very evident as it had been between Yarm and Aislaby earlier in the year. There were many lepidoptera including *Aglais urticae (*Small Tortoiseshell), *Anthophila fabriciana (*Nettletap), *Aphantopus hyperantus (*Ringlet), *Cabera pusaria (*White Wave), *Coenonympha pamphilus (*Small Heath), *Euthrix potatoria (*Drinker), *Maniola jurtina (*Meadow Brown), *Ochlodes sylvanus (*Large Skipper), *Pararge aegeria (*Speckled Wood), *Polyommatus icarus (*Common Blue), *Scotopteryx chenopodiata (*Shaded Broad-bar) and *Tyria jacobaeae (*Cinnabar). Amongst the flora were *Allium scorodoprasum (*Sand Leek), *Bolboschoenus maritimus (*Sea Club Rush), *Centaurea scabiosa (*Greater Knapweed), *Centaurium erythraea (*Centaury), *Dactylorhiza fuchsii (*Common Spotted Orchid), *Dactylorhiza purpurella (*Northern Marsh Orchid), *Daucus carota (*Wild Carrot), *Linum usitatissimum (*Flax), *Melilotus officinalis (*Melilot), *Oenanthe crocata (*Hemlock Water Dropwort), *Sonchus asper (*Prickly Sow Thistle) and *Vicia tetrasperma (*Smooth Tare).

Wednesday, 2nd July, 10:30 am, leader Jo Scott GR NZ479254. Cowpen Bewley Woodland Park.
This was the Grass identification workshop. However, the most notable record was *Agapanthia villosoviridescens* (Golden-bloomed Grey Longhorn). This is a species whose distribution has expanded rapidly from Southern England in recent years. This is likely to be the first record for VC 66 (Co. Durham).

Wednesday, 9th July, 6:30 pm, leader Malcolm Birtle GR NZ640226. Marske Sandhills.
The party met outside St. Germain's on a warm clear evening to explore the sandhills east of Marske. There were many specimens of *Anacamptis pyramidalis* (Pyramidal Orchid) *Dactylorhiza fuchsii* (Common Spotted Orchid) and *Gymnadenia conopsea* (Fragrant Orchid, in a rich calcicole flora.
Molluscs of interest were *Vallonia costata* (Ribbed Grass Snail), found by Malcolm Birtle, and *V. excentrica* (Excentric Grass Snail), diminutive species which are inhabitants of dry open grassland. *Merdigera obscura* (Lesser Bulin), also found by Malcolm Birtle, is uncommon in the Cleveland area but has been recorded in recent times at Cattersty dunes and Hummersea Scar near Skinningrove and also at a few woodland sites. One individual of the uncommon bicoloured form of *Arion ater* agg. (probably the *A. rufus* segregate, i.e. the Large Red Slug: Fig. 1) was found by Dave Barlow.
The ground beetle *Broscus cephalotes* was seen (Fig. 3). This is a species confined almost entirely to coastal sites in Britain. A sub-adult Polydesmid millipede was located in a moist area at the base of grass on the seaward side of the dunes. Probably *Polydesmus coriaceus* (Fig. 2), this find is of significance because the only previous records for it in the region are from nearby at Saltburn Gill and Little Dale (both 22nd April 1989). Only adult individuals can be identified with certainty so it was retained in the hope of rearing it to maturity.

Fig. 1: Bicoloured form of *Arion ater* agg., Marske Dunes

Fig.2: Polydesmid millipede (*Polydesmus coriaceus* ?), Marske Dunes

Fig. 3: The ground beetle *Broscus cepahalotes*, Marske Dunes

The full list of molluscs and beetles noted was-

Molluscs

Arion ater agg.	(Black/Large Red Slug)
Arion subfuscus	Dusky Slug
Candidula intersecta	Wrinkled Snail
Cepaea nemoralis	Brown-lipped Snail
Cernuella virgata	Striped Snail
Cochlicopa lubrica	Slippery Moss Snail
Cornu aspersum	Common Snail
Lauria cylindracea	Chrysalis snail
Oxychilus alliarius	Garlic Snail
Oxyloma elegans	Pfeiffer's Amber Snail
Potamopyrgus antipodarium	Jenkins' Spire Snail
Trochulus hispidus	Hairy Snail
Vallonia excentrica	Excentric Grass Snail
Vitrina pellucida	Winter Semi-slug

Beetles

Broscus cephalotes	
Rhagonycha fulva	Black-tipped Soldier Beetle

Wednesday, 16th July, 6:30 pm, leader Malcolm Birtle GR NZ376235. Stillington.

Heavy rain threatened the commencement of this meeting but all was well in the end. However, the site was very wet which subdued any flying insects and made searching vegetation a very wet affair. It was interesting to find *Rivula sericealis* (Straw Dot)

and *Tyria jacobaeae* (Cinnabar). *Thymelicus sylvestris* (Small Skipper), *Polyommatus icarus* (Common Blue), *Pieris brassicae* (Large White), *Maniola jurtina* (Meadow Brown) and *Aphantopus hyperantus* (Ringlet) were found in some late evening shafts of sun. *Ranunculus sceleratus (*Celery-leaved Buttercup) was growing round one of the pond margins.

Sunday, 20th July, 10:30 am, leader Bill Hall GR SE369630. YWT Staveley Nature Reserve.

Ten CNFC and 4 YDG members made the trip to this Yorkshire Wildlife Trust reserve on a day when rain was forecast though the weather was at the outset warm and humid – later that was to change markedly.

The outing started well at two new ponds at South Pastures near the main entrance and carpark. One of these ponds was so new that it was hardly vegetated. The dragonfly list here was: *Lestes sponsa* (Emerald Damselfly), *Enallagma cyathigerum* (Common Blue Damselfly), *Ischnura elegans* (Blue-tailed Damselfly), *Aeshna grandis* (Brown Hawker), *Aeshna cyanea* (Southern Hawker), *Anax imperator* (Emperor Dragonfly), *Libellula quadrimaculata* (Four-spot Chaser) and *Sympetrum striolatum* (Common Darter). We had excellent and unusually close views of Brown Hawker and Emperor Dragonfly ovipositing which allowed many photo opportunities. Quite some time was spent admiring the dragonflies of these two pools.

The group then moved on to the area of the East Lagoon to find *Orthetrum cancellatum* (Black-tailed Skimmer) on a small pool on the right side of the path. Brown Hawker was evident throughout the reserve.

Part of the group then walked on to the Upper Marsh area of the reserve a site for *Epipactis palustris* (Marsh Helleborine). Unfortunately they were almost completely over though some heads still held open flowers. Everyone met up at the 'hidden' Hay Field Meadow and found some seats for lunch. *Dactylorhiza fuchsii* (Common Spotted Orchid) and a completely gone over *Ophrys apifera* (Bee Orchid) were seen. After lunch we all moved on to the the new hide overlooking the West Lagoon where there were numerous *Anser anser* (Greylag Geese) and *Vanellus vanellus* (Lapwings) – also *Emberiza schoeniclus* (Reed Bunting), *Phylloscopus collybita* (Chiff chaff) and *Riparia riparia* (Sand Martin). Whilst in this hide it started to rain quite gently but we did not get the message and waited until it was a downpour and so had to make the long walk back to the carpark in torrential rain, though this was relieved a little by finding a plant of *Epipactis helleborine* (Broad-leaved Helleborine) on the way.

Wednesday, 23rd July, 1.30pm, leader Vincent Jones GR NZ541132. Eastfield Farm, Nunthorpe.

Vincent gave a very interesting introduction to the flora of this farm with the kind permission of the owners. Notable plants seen were-*Senecio inaequidens (*Narrow-leaved Ragwort) in a farm yard next to Nunthorpe Hall and *Lathyrus nissolia (*Grass Vetchling) with *Alopecurus geniculatus* (Marsh Foxtail) in the meadows around Nunthorpe Stell. It turned out to be an impressive day for lepidoptera too with the following on the wing-

Aglais io	Peacock
Aglais urticae	Small Tortoiseshell
Agrophila straminella	Straw Grass-veneer
Aphantopus hyperantus	Ringlet
Lycaena phlaeas	Small Copper
Maniola jurtina	Meadow Brown
Mesapamea secalis	Common Rustic
Pieris brassicae	Large White
Pieris napi	Green-veined White

Polygonia c-album	Comma
Scotopteryx chenopodiata	Shaded Broad Bar
Thymelicus sylvestris	Small Skipper
Vanessa atalanta	Red Admiral

Saturday, 26th July, 10:30 am, leader Eric Gendle GR SE965944. Whisperdales.

A party of 12 members enjoyed a varied walk, mostly in hot sunshine, descending into Whisperdale before climbing up to Silpho, crossing a selection of fields before returning to their cars via a series of woodland edge walks.

The descent into Whisperdale produced much of interest. *Lysimachia punctata* (Dotted Loosestrife), *Centaurium erythraea,* (Common Centaury), *Hypochaeris radicata* (Catsear), *Dactylorhiza fuchsii* (Common Spotted Orchid), *Melampyrum pratense* (Common Cow-wheat), *Angelica sylvestris* (Wild Angelica) and *Hypericum pulchrum* (Slender St John's-wort) were noted. The smell of *Phallus impudicus* (Stinkhorn) ensured that it was spotted along with a *Amanita rubescens* (Blusher). Several ferns were identified. *Oreopteris limbosperma* (Lemon scented), *Dryopteris dilatata* (Broad Buckler) and *Blechnum spicant* (Hard Fern) were identified along with Bracken (*Pteridium aquilinum).* Butterflies such as Ringlet (*Aphantopus hyperantus),* Small Skipper (*Thymelicus flavus),* Green-veined White (*Artogeia napi)* and Meadow Brown (*Maniola jurtina)* were flying in abundance. In the open meadows *Galeopsis tetrahit* (Common Hemp Nettle), *Rhinanthus minor* (Yellow Rattle), *Odontites vernus* (Red Bartsia) and *Stachys officinalis* (Betony) were present, as were *Melanargia galathea* (Marbled Whites), whilst a Buzzard (*Buteo buteo)* circled overhead.

Climbing to a disused quarry for lunch an unusual Knapweed *Centaurea debeauxii* was spotted, along with *Hypericum montanum* (Pale St John's-wort). A diversion was made into Silpho Cornfield Project site where a host of unusual plants were seen and photographed, including *Narcissus poeticus* (Pheasant's Eye), *Galeopsis speciosa* (Large Flowered Hemp Nettle), *Galeopsis angustifolia* (Red Hemp Nettle), *Vicia bithynica* (Bithynian Vetch), *Centaurea cyanus* (Corn Flower), *Chrysanthemum segetum* (Corn Marigold) and *Agrostemma githago* (Corn Cockle). These had been planted in a successful attempt to replicate a hay meadow typical of former farming practices.

The route then followed several corn field edges where *Aglais urticae* (Small Tortoiseshell), *Vanessa atalanta* (Red Admiral), *Cynthia cardui* (Painted Lady) and *Inachis io* (Peacock*)* were spotted.

The final stretch of the walk followed paths through a mixed woodland with many fine specimen conifers and several *Castanea sativa* (Sweet Chestnut) trees before a final period walking through a clear-felled area now covered in a range of grasses shining beautifully in the afternoon sun.

The route back passed through places with interesting names-Swang Road, Cumboots Brow, Cripple Grain Head, Flockrake Noddle, Noddle End, Surgate Brow and Swarth Howe.

Sunday, 27th July, 9.30am leader John Money GR NZ585250. Coatham Marsh and South Gare.

We met at Coatham Marsh for this joint meeting with the Yorkshire Branch of Butterfly Conservation. We found seven species of butterfly and there was enough activity to detain us for the whole morning.

Thymelicus sylvestris	Small Skipper
Lycaena phlaeas	Small Copper
Polyommatus icarus	Common Blue
Aglais urticae	Small Tortoiseshell
Pararge aegeria	Speckled Wood
Maniola jurtina	Meadow Brown
Coenonympha pamphilus	Small Heath

A pair of mating Common Blues provided some practice for the photographers and we also saw *Zygaena filipendulae* (Six-spot Burnet) and *Sympetrum striolatum* (Common Darter).

We moved on to South Gare for lunch and to search for two target species and compare the two sites. We added to our list:

Vanessa cardui	Painted Lady
Inachis io	Peacock
Lasiommata megera	Wall
Maniola jurtina	Meadow Brown
Coenonympha pamphilus	Small Heath

Everyone had good views of *Hipparchia semele* (Grayling), one of our target species, despite its excellent camouflage when at rest on the Cabin Rocks. Sadly we were just too late for the *Argynnis aglaja* (Dark Green Fritillary) which had been present earlier.

Wednesday, 30th July, 6:30 pm, leader Malcolm Birtle GR NZ418132. Hardwick Dene and Elmwood.

This evening meeting was intended as an exploration of one of the urban nature reserves under the management of the Tees Valley Wildlife Trust. A number of these sites are to become the focus of attention in the next few years through the Wild Green Places project recently launched by the Trust. Although little of note was found at this meeting the site showed some promise. One of the ponds produced *Physa fontalis* (Common Bladder Snail) and *Aphantopus hyperantus (*Ringlet), *Pleuroptya ruralis (*Mother of Pearl) and *Udea lutealis (*Pale Straw Pearl) were active.

Wednesday, 6th August, 6:30 pm, leader Neil Baker GR NZ588231. Foxrush Farm.

This was also a meeting at a recently established urban nature reserve. It was a very quiet evening with almost no insect or bird activity. *Arion ater* seg. (Black Slug) and *A. rufus* (Large Red Slug) were found on different parts of the site, along with what were probably hybrids of the two (*A. ater* agg.). Numerous typically black *Arion ater* seg. were seen, one of which entertained us with a fine display of the species specific rocking behaviour when stroked.

The other find of interest was *Tandonia sowerbyi* (Sowerby's Keeled Slug). Two individuals were located sheltering under fallen bark (Fig. 4). This is a species of farmland and older gardens but there are very few records of it in the Cleveland area.

Fig 4: *Tandonia sowerbyi*, Foxrush Wood

The full list of molluscs was-

Aegopinella nitidula	Smooth Snail
Arion ater seg.	Black Slug
Arion circumscriptus	Dotted Slug
Arion distinctus	Brown Soil Slug
Arion rufus	Large Red Slug
Arion subfuscus	Dusky Slug
Cepaea nemoralis	Brown-lipped Snail
Cornu aspersum	Common Snail
Deroceras invadans	Tramp Slug
Deroceras reticulatum	Netted Field Slug
Discus rotundatus	Rounded Snail
Oxychilus alliarius	Garlic Snail
Oxychilus cellarius	Cellar Snail
Tandonia sowerbyi	Sowerby's Keeled Slug
Trochulus hispidus	Hairy Snail

The mines of *Cameraria ohridella (*Chestnut Leaf Miner) were very evident and *Pararge aegeria* (Speckled Wood), *Udea lutealis* (Pale Straw Pearl) and *Sympetrum striolatum (*Common Darter) were in flight.

Sunday, 10th August, 10:30 am, leader Neil Baker GR NZ395165. Coatham Stob.

This meeting was curtailed by heavy rain which subdued all activity. However the following were still active-*Abraxas grossulariata (*Magpie), *Agriphila straminella* (Straw Grass-veneer), *Coenonympha pamphilus (*Small Heath) and *Tyria jacobaeae (*Cinnabar). Large quantities of Oak galls were noticeable particularly *Andricus fecundator (*Artichoke Gall), *Andricus quercuscalicis* (Knopper Gall), *Biorhiza pallida* (Oak Apple), *Dipoloepis rosae (*Bedeguar Gall), *Neuropterus quercusbaccarum* (Spangle Gall) and *Neuroterus numismalis (*Silk Button Gall).

Wednesday, 27th August, 11.00am, leader Jo Scott GR NZ810160. Runswick Bay.
13 members attended a rockpool and geology event and walked from the village to Topman Steel where the wavecut platform and rockpools were diligently searched. The geology was described in some detail and this can be found below under 'Geology and Palaeontology of Topman Steel, West Runswick Bay'.

Runswick Bay with an ebbing tide

Algae

Ascophyllum nodosum	Egg wrack
Ceramium sp.	Pincer weed
Cladophora sp.	Green branched weed
Cladostephos spongiosus	Hairy sand weed
Corallina officinalis	Coral weed
Desmarestia aculeata	Prickly weed
Fucus serratus	Serrated wrack
Halidrys siliquosa	Sea oak
Lomentaria articulata	Bunny Ears
Mastocarpus stellatus	False Irish Moss
Osmundea hybrida	False pepper dulse
Osmundea pinnatifida	Pepper dulse
Pelvetia canaliculata	Channel wrack
Plocamium cartilagineum	Cock's comb
Polysyphonia lanosa	Wrack siphon weed
Ulva sp.	Gutweed and Sea lettuce

Animals

Acanthodoris pilosa	Sea slug
Actinia equina	Beadlet anemone
Amphipholis squamata	Dwarf brittle star
Anomia ephippium	Saddle oyster
Ansates pellucida	Blue rayed limpet

Asterias rubens	Common starfish
Botryllus schlosseri	Colonial ascidian
Buccinum undatum	Whelk
Cancer pagurus	Edible crab
Carcinus maenas	Shore crab
Dynamena pumila	Hydroid
Electra pilosa	Sea mat (bryozoan)
Gibbula cineraria	Grey Topshell
Goniodoris nodosa	Sea slug
Halichondria panicea	Breadcrumb sponge
Homarus gammarus	Common lobster
Lanice conchilega	Sand mason
Lipophrys pholis	Shanny
Littorina littorea	Common winkle
Membranipora membranacea	Sea mat (bryozoan)
Munidopsis serricornis	Squat Lobster
Nucella lapillus	Dog whelk
Ophiothrix fragilis	Brittle star
Oshurkovia littoralis	Sea mat (bryozoan)
Pagurus bernhardus	Hermit crab
Patella vulgata	Common limpet
Pholis gunnellus	Butterfish
Pomatoceros triqueter	Tubeworm
Porcellana platycheles	Broad-clawed porcelain crab
Psidia longicornis	Long-clawed porcelain crab
Spirorbis borealis	Spiral tubeworm
Lichens	
Verrucaria maura	Black tar lichen
Verrucaria mucosa	Green lichen

***Actinia equina* – Beadlet** Anemone

***Goniodoris nodosa* – Sea slug**

***Oshurkovia littoralis* – Sea mat**

***Lomentaria articulata* – Bunny ears**

Saturday, 30th August, 11.00am, leader Denis Goldring GR NZ899115. Whitby to Sandsend jointly with the Tees Valley Regionally Important Geological Sites group.

The party met at 11am at the bandstand (NZ898115). The day was sunny and dry but there was a trying westerly wind that made walking difficult on the sands. The idea was to look at some Jurassic sedimentary rock exposures and Quaternary glacial deposits and compare them with the on-going processes of erosion and deposition. Low tide was at 13.37.

1. East and West Cliffs, contrasted Jurassic successions and the Whitby Fault
The splendid view of East Cliff shows Lower Jurassic (Whitby Mudstone Formation) marine mudstones overlain by deltaic beds, mostly bedded flood plain deposits (Middle Jurassic, Ravenscar Group). Two critical marker horizons (the Dogger and Eller Beck Formations) mark marine incursions. On the west side, thick, current-bedded, river channel sandstones (also Ravenscar Group) are seen on each side of the Khyber Pass. This striking contrast in

lithology was first noticed long ago (e.g. by Rev. George Young in 1817) and was one reason for placing a major dislocation (fault) along the line of the River Esk.

The supposed ups and downs of the fault have varied from over 60m to nil over the years as a result of changing interpretations. Roger Osborne has listed them in his readable book 'The Floating Egg'. John Hemingway (1963), local geologist and Professor at Newcastle University, was the first to set the record straight by means of finding the marker horizons on the west side. There is, indeed, very likely some sort of fault, otherwise why would the river channel be there? There may be trans-current (sideways) movement, but any vertical movement is certainly small.

2. Battery Sands

John Hemingway reported in 1949 that there was a lens of black sand near high water mark below the Spa. This location is close to a wreck with a cargo/ballast of Swedish magnetite iron ore and the two might be related. Unfortunately, there was too much ordinary sand cover to see these features.

3. West Cliff (First & Second Nabs)

The river channel-fill sandstone and associated deposits here are ideally exposed in the cliffs. There are two sequential deposits in view consisting mainly of current bedded sandstone. The lower one passes up into thinly bedded deposits including coaly shale. The two units are separated by a distinct break in the sequence, in effect an unconformity, albeit local and minor in terms of the geological history. The cliffs have been described by, for example, Hemingway, Wilson & Wright (1963) and Knox *et al* (1990).

4. Lector Cliff and the reef near the low water mark

This reef has a rugged indented top surface as a result of its iron-rich nature. The shifting sands often hide it. Missed by earlier geologists, Hemingway (1949) was the first to recognize its nature as an ooidal ironstone (with the characteristic fish-roe texture when looked at with a hand lens) and that it represents the marker Dogger Formation. On the present excursion, the reef was partly exposed and the distinct southerly dip could be made out. Lector Cliff itself and the scar immediately fronting it consist of massive channel sandstone. Between the two outcrops, when sand conditions are favourable, dark grey mudstone with rootlets is present and it's possible there may be a fossil plant horizon here waiting to be found.

Other than Lector Cliff itself, the cliffs along this stretch were landscaped and drained in the 1970s and the promenade extended to Upgang.

5. Upgang and the cliffs to the west

The party were able to stop for lunch here gaining some shelter from the wind by the armourstone blocks of Norwegian gneiss (rocks that have undergone intensive pressure and heat as a result of tectonism). East of Upgang the cliffs are formed of the natural Quaternary glacial deposits and are being eroded rapidly to the detriment of the golf course.

George Barrow of the Geological Survey (1885) divided the glacial deposits into three units, Upper Boulder Clay, Middle Glacial Sands & Gravel and Lower Boulder Clay (boulder clay is now called till). The sands and gravel overlying the boulder clay are clearly seen on several promontories but the main feature along these cliffs is the rapid erosion with landslips, mudflows, etc obscuring the glacial sequence. Near the cliff base a distinct colour difference from dark grey to purplish red marks a change in boulder clay type from material

consisting mainly of local (Lower Jurassic) rock to boulder clay with a variety of stones from much further afield.

At a time when the beach sand must have temporarily disappeared, Hemingway and his student Riddler (1980) described three large glacial deposits, 'rafts', within the till consisting of intact, bedded Jurassic strata. These rafts are actually within the till sequence; rockhead is at least 15m below high tide level. Roberts *et al*., (2013) have re-examined the section recently but have been under the disadvantage of not being able to look at the rafts, now hidden by sand. They think that the deposits date from the last main ice age, around 21k years ago, with the uppermost boulder clay unit being from the final re-advance, around 15k years ago.

6. Raithwaite Beck mouth

This is the next locality where the Dogger Formation is present at around sea level. The Eskdale Iron Company developed a drift mine near the beck mouth. Output totalled 14,290 tons from 1856 to 1858, the ore being shipped from a jetty about 300m to the west. With so much sand the wooden stumps of this jetty were hardly seen but occasionally, after storms, they are clearly visible. Rastall and Hemingway (1939) described a section of the Dogger ironstone close by on the main road. Both it and the mine adit have long been obscured.

The beach was stripped of sand and the bedrock exposed in early Spring, 2010 and, again, around Christmas, 2013). Along much of the beach east of East Row a thin layer of boulder clay was seen to rest on Jurassic mudstone (probably the Lower Jurassic, Mulgrave Shale,) that is inclined gently seawards. Further east, close to the jetty, the Dogger ironstone was seen forming a sequence of beds, alternating sandy ironstone and mudstone and inclined at about 30° to the east. At the time it was thought most likely that this was another glacial raft but there is the possibility that the beds might be within a fault zone. It is only 1.5 km from here to the former Sandsend railway where the Dogger is high up on the hill about 60m above sea level.

7. Sandsend

As the party approached Sandsend it became even more obvious that the sand cover was unduly thick. It was seen to have been eroded back locally by wave action with an almost cliff-like slope developed.

The walk ended close to the beach café at East Row but some members went on to view the cliffs and scar beyond the Council Car Park (the site of Sandsend Alum House, NZ861129). Traces of the alum liquor conduit tunnel from the alum quarries were looked for in the cliff side and the post holes of the wooden jetty on the scar were counted. The jetty was used for loading cementstones. It was also amusing to find pyritised impressions of ammonites, including the zone fossil *Harpoceras,* although they are too fragile to be collected.

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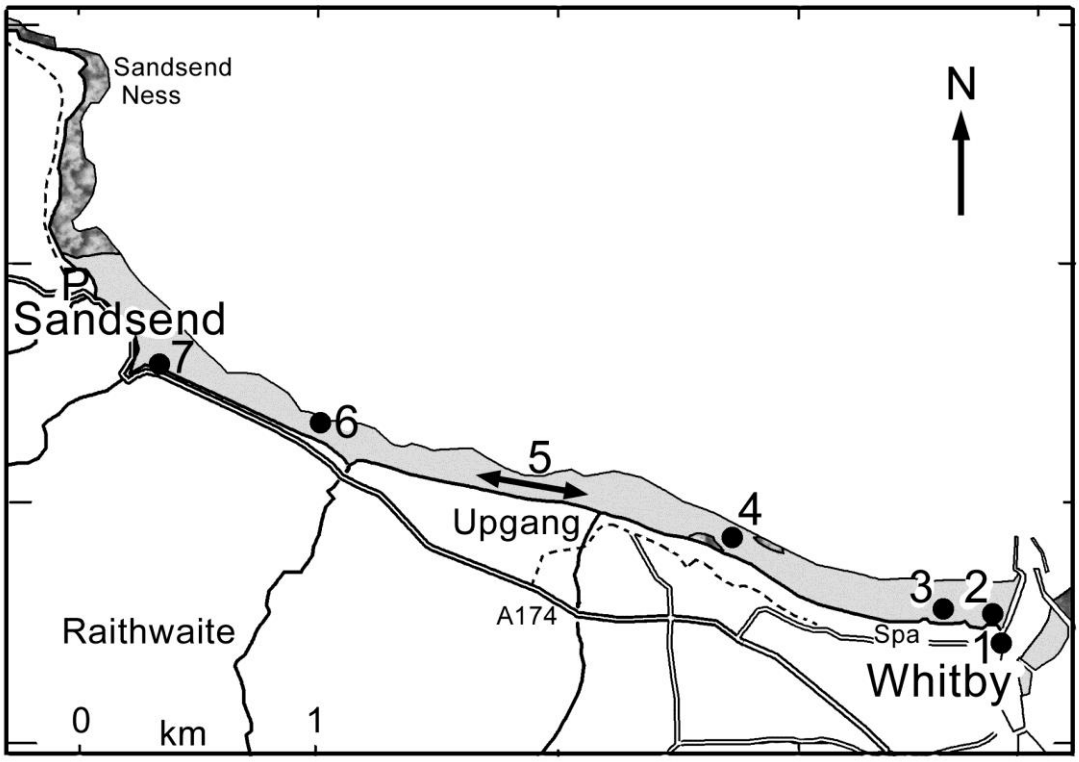


Sunday, 7th September, 10:30 am, leader Andy Astbury GR NZ477020. Swainby.
Four members walked from Swainby to Osmotherley through Scarth Lees, Arncliffe Woods and past the Lady Chapel. The abundance of *Pararge aegeria* (Speckled Wood) butterflies was remarkable considering how recently the species appeared in northern England. The return journey was made via the Drovers Road across Pamperdale Moor to Sheepwash, then to Coal Mire and Swainby. Some recently felled logs provided an opportunity for tree ring counting. Some cut logs at Ingleby Greenhow had also been recently studied. The results revealed a mixture of ages ranging from 23 to 60years. *Aglais urticae (*Small Tortoiseshell) and *Lasiommata megera (*Wall) were seen feeding on Thistle heads. A *Buteo buteo* (Buzzard) was also noted.

Wednesday, 24th September, 10:30 am, leader Aubrey Colling GR NZ452934. Over Silton.
Rain the previous day ameliorated what had threatened to be a foray too dry to yield much of interest. From the end of the village a steep path led through mixed coniferous and deciduous woodland where several species were found, including *Suillus grevillei* under larch, *Lactarius quietus* under oak, *Lyophyllum connatum* and *Russula atropurpurea*. More species were found in the grass verges bordering the forestry road towards Thimbleby and the site where *Mitrula paludosa* had been seen in April was noted. Halfway along this part of the walk we paused to look at the Hanging Stone and several members climbed up to it following a rough track. Returning to Over Silton by a lower road, access to woodland, mainly deciduous, was easier and fungi more abundant. Near the end of the walk a second *Lypohyllum* species was found, but in very poor condition. The list of species found is as follows .

Fungi

Armillaria tabescens	Ringless honey fungus	SE4593/SE4594
Auricularia auricula-judae	Jelly ear	SE4593/SE4594
Bolbitius titubans	Yellow fieldcap	SE4593/SE4594
Clitocybe nebularis	Clouded funnel	SE4593/SE4594
Collybia maculate	Spotted Toughshank	SE4593/SE4594
Collybia confluens	Clustered Toughshank	SE4593/SE4594
Collybia peronata	Wood Woollyfoot	SE4593/SE4594
Coprinellus subimpatiens		SE4593/SE4594
Coprinopsis atramentaria	Common Inkcap	SE4593/SE4594
Hypholoma fasciculare	Sulphur Tuft	SE4593/SE4594
Lactarius blennius	Beech Milkcap	SE4593/SE4594
Lactarius quietus	Oakbug Milkcap	SE4593/SE4594
Lactarius tabidus	Birch Milkcap	SE4593/SE4594
Lyophyllum connatum	White Domecap	SE4593/SE4594
Lyophyllum decastes	Clustered Domecap	SE4593/SE4594
Pluteus cervinus	Deer Shield	SE4593/SE4594
Phallus impudicus	Stinkhorn	SE4593/SE4594
Phragmidium violacium	Rust on Bramble leaf	SE4593/SE4594
Rhytisma acerinum	On Sycamore leaf	SE4593/SE4594
Russula ochroleuca	Ochre Brittlegill	SE4593/SE4594
Russula atropurpurea	Purple Brittlegill	SE4593/SE4594
Suillus grevillei	Larch Bolete	SE4593/SE4594
Suillus luteus	Slippery Jack	SE4593/SE4594

Tricholomopsis rutilans	Plums and Custard	SE4593/SE4594
Tubercularia vulgaris	conidial stage of *Nectria cinnabarina*	SE4593/SE4594
Xylaria polymorpha	Dead Mans Fingers	SE4593/SE4594
Butterflies		
Pararge aegeria	Speckled Wood	SE4493/4494 SE 4593.
Aglais urticae	Small Tortoiseshell	SE4593
Polygonia c-album	Comma	SE449941

The following were also of interest-*Sympetrum striolatum (*Common Darter), *Mesembrina meridiana (*Noon Fly) and *Buteo buteo* (Buzzard).

Saturday, 18th October, 11.00am, leader Alan Simkins GR NZ708093. Danby.

The Striated Earthstar

Peter Waterton

I saw Striated Earthstars, *Geastrum striatum*, (6 eventually) on 22nd September 2014 in my Ayton garden.GR NZ 56210

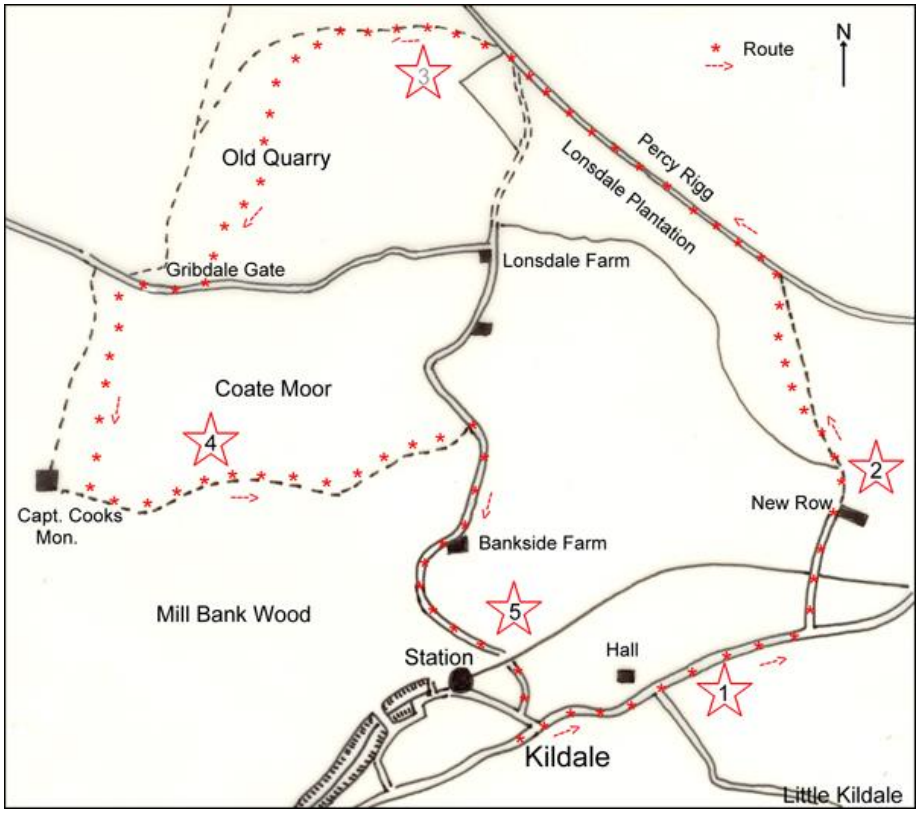
Leucoma salicis (White Satin) at Redcar, June 2014

Malcolm Birtle

On the 24th June 2014 the Northern Echo published a report describing the defoliation of Polar trees in Redcar cemetery (NZ606243) by a caterpillar. Included with the report was a photograph of the caterpillars which looked like *Leucoma salicis* (White Satin) larvae. As this is a species with only a few records for Yorkshire and County Durham it was decided that a visit might be worthwhile. Large numbers of larvae, pupae and imagos were found on well defoliated Polars. 'Infestation' was a suitable adjective given the numbers and amount of damage they had caused to the foliage.

The Kildale Lichen Walk

Jo Scott, David Smith



A list of the lichens recorded follows and to help identify the location of the first sighting of each lichen species the route has been split into 5 sections

1. From Kildale to the turn off for New Row
2. New Row road to the Percy Rigg road junction.
3. Percy Cross Rigg Road to Gribdale Gate
4. Gribdale gate via Captain Cook's Monument to join the road
5. Road past Bankside Farm back to Kildale

A photographic guide to the lichens can be downloaded from the club website at www.clevelandnats.org.uk in Wildlife of the Area.

Species	Where	Section
Acarospora sp.	Kildale Hall Wall	1
Candelariella vitellina	Drystone Wall	1
Cladonia chlorophaea	Large boulder	4
Caloplaca flavocitrina	Drystone Wall	1
Baomyces rufus	Wall from Gribdale up to Capt.Cook's	4
Caloplaca flavescens	Railway Bridge on return to Kildale	5
Cladonia coniocraea	Drystone Wall	2
Cladonia diversa	Rotting tree stumps	2
Cladonia fimbriata	Rotting tree stumps	2
Cladonia floerkeana	Rotting tree stumps	2
Cladonia gracilis	Boulder, Cleveland Way from Capt Cook's to Kildale Road	4
Cladonia polydactyla	Boulder, Cleveland Way from Capt Cook's to Kildale Road	4
Collema crispus	Kildale Hall Wall	1
Evernia prunastri	Branches, Cleveland Way from Capt Cook's to Kildale Road	4

Hypogymnia physodes	Branches, Cleveland Way from Capt Cook's to Kildale Road	4
Hypogymnia tubulosa	Branches, Cleveland Way from Capt Cook's to Kildale Road	4
Lecanora campestris	Drystone Wall	1
Lecanora chlarotera	On rowan at edge of Lonsdale Plantation	2
Lecanora gangaliodes	Drystone Wall	1
Lecanora muralis	On a stone by road back to Kildale	5
Lecanora polytropa	Drystone Wall	1
Lecanora soralifera	Drystone Wall	1
Lecanora sulphurea	Kildale Hall Wall	1
Lecidea fuscoatra	Kildale Hall Wall	1
Lecidella elaeochroma	Birch, Cleveland Way from Capt Cook's to Kildale Road	4
Lepraria sp.	Drystone Wall	2
Melanelixia subaurifera	Hawthorn between Quarry and Gribdale	3
Ochralechia androgyna	Drystone wall between Gribdale and Capt.Cook's Monument	4
Ochralechia parella	Drystone wall between Gribdale and Capt.Cook's Monument	1
Ophioparma ventosa	Drystone wall between Gribdale and Capt.Cook's Monument	4
Parmelis saxatilis	Drystone Wall	1
Parmelia sulcata	Branches, Cleveland Way from Capt Cook's to Kildale Road	4
Parmotrema perlatum	Tree, Cleveland Way from Capt Cook's to Kildale Road	4
Pertusaria corallina	Drystone Wall	1
Phaeophyscia orbicularis	Drystone Wall. In shade of trees	1
Physcia adscendens	Drystone wall by road junction to Little Kildale	1
Physcia caesia	New Row on boulder by last house	2
Physcia tenella	Drystone wall by road junction to Little Kildale	1
Porpidia macrocarpa	On broken down wall	2
Porpidia tuberculosa	Drystone Wall	1
Pseudevernia furfuracea	Drystone wall between Gribdale and Capt.Cook's Monument	4
Ramalina farinacea	Hawthorn between Quarry and Gribdale	3
Rhizocarpon geographicum	Boulders near Quarry	3
Rhizocarpon oederi	Boulders near Quarry	3
Rhizocarpon reductum	Drystone Wall	1
Trapelia placodioides	Drystone wall between Gribdale and Capt.Cook's Monument	4
Tuckermanopsis chlorophylla	Branch, Cleveland Way from Capt Cook's to Kildale Road	4
Xanthoria aureola	Drystone Wall	1
Xanthoria parietina	Drystone Wall	1

Cladonia polydachtyla

A Summary of Results from Recent Surveys of Invertebrate Assemblages at Gravel Hole and Maze Park

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INTRODUCTION

Brownfield sites have gradually gained recognition as often having significant wildlife interest; indeed, this interest is now officially recognised by the UK BAP Priority Habitat designation known as 'Open Mosaic Habitats on Previously Developed Land' [OMHPDL]. Buglife (2009) defined this habitat as being characterized by unmanaged, flower-rich grasslands with sparsely-vegetated areas on nutrient-poor substrates. Buglife (2009) also stated that OMHPDL may contain other features which add to habitat diversity, *e.g.* bare ground, seasonally-wet areas and patches of scrub.

I investigated invertebrate assemblages at four areas of OMHPDL in Teesside during 2010, 2012 and 2013, as part of projects organised by *Buglife – The Invertebrate Conservation Trust* and *INCA* [*Industry Nature Conservation Association*]. Areas of OMHPDL are commonplace in Teesside, but many are on land which is out-of-bounds to the general public; indeed, two of the four Teesside sites selected for study during 2010, 2012 and 2013 were adjacent to industrial plants, and within security fencing. These sites were near Billingham and Seal Sands. The remaining two study sites included the Tees Valley Wildlife Trust's nature reserves known as Gravel Hole and Maze Park, which are both open to the general public.

Gravel Hole Nature Reserve is located north of Norton near Stockton on Tees, in the National Grid 1km square NZ4423: its central longitudinal and latitudinal co-ordinates being 54°36'04.21"N 1°18'37.61"W. Maze Park Nature Reserve is located beside the south bank of the River Tees near Middlesbrough, mainly in the National Grid 1km square NZ4619: its central longitudinal and latitudinal co-ordinates being 54°33'54.91"N 1°16'35.27"W.

I carried out a baseline study of invertebrate assemblages at Gravel Hole and Maze Park during 2010, in co-operation with Dr. Sarah Henshall representing *Buglife*, and Dr. Robert Woods representing *INCA*. For the purposes of the baseline study, both sites were compartmentalized into units which could be adequately sweep-sampled within a 30-minute period or less. The baseline study at Maze Park was restricted to, and entirely covered, the nature reserve; whereas, the baseline study at Gravel Hole was somewhat broader than the nature reserve, which was again entirely covered. The results of the 2010 baseline study were included in Grayson (2011).

Monitoring studies were subsequently carried out during 2012 and 2013. The 2012 study was organised by Dr. Robert Woods, and the results were included in Grayson (2012). This follow-up study of 2012 focussed on a few discrete parts of Tees Valley Wildlife Trust's nature reserves at Gravel Hole and Maze Park, where habitat-management or habitat-creation work had been carried out following the baseline survey of 2010. The 2013 study also focussed on such areas, but was somewhat broader at Gravel Hole. The 2013 project was arranged by Miss Clare Dinham and Dr. Sarah Henshall of *Buglife*, and the results were included in Grayson (2014).

Some comparisons can be made between the results of the 2010, 2012 and 2013 surveys; although it is important to acknowledge that the baseline study was far more extensive than the monitoring studies of 2012 and 2013; hence, any apparent paucity of individual invertebrates recorded during 2012 and 2013 does not represent a genuine decline. The 2010 and 2012 surveys involved five visits to each compartment at Gravel Hole and Maze Park, but only four visits were made during 2013. The extents of compartments varied with each survey, due to slightly different objectives. The 2012 survey covered the least amount of area at both Gravel Hole and Maze Park; hence, the overall relative dearth of data from 2012.

My allocated target orders for the surveys were Diptera and Hymenoptera. Within Hymenoptera: the target assemblage was the sub-order Aculeata [bumblebees, social bees, social wasps, solitary bees, solitary wasps, ants, etc.]. Within Diptera, the target assemblages were: the super-family Tipuloidea [crane-flies]; the disparate group of species that is the so-called Larger Brachycera [soldier-flies, robber-flies, horseflies, snipe-flies, Bee-flies, etc.]; Dolichopodidae [long-legged flies]; Syrphidae [hoverflies]; Micropezidae [stilt-legged flies]; Conopidae [thick-headed flies]; Ulidiidae, Platystomatidae and Tephritidae [three of the disparate groups of picture-winged flies]; and Sciomyzidae [marsh-flies or snail-killing flies].

In addition to the aforementioned assemblages, I also recorded all Odonata [damselflies and dragonflies], Orthoptera [grasshoppers and allied insects], and Lepidoptera: Rhopalocera [butterflies]; plus various miscellaneous non-target invertebrates of which I have specialist knowledge. The tables divulge a full list of invertebrates collected or identified by me as a result of the surveys; however, this is not a full list from the studies organised by *Buglife* and *INCA* at Gravel Hole and Maze Park, *e.g.* Dr. Robert Woods recorded many more Lepidoptera [butterflies and moths], principally moths from light-trapping; and Dr. Sarah Henshall recorded Coleoptera [beetles], principally from pitfall-trapping, and Araneae [spiders].

NOTEWORTHY INVERTEBRATES

The surveys at Gravel Hole produced seven species which are currently attributed a national conservation status via JNCC [Joint Nature Conservation Committee], *viz*. the ground beetle *Asaphidion pallipes*; the micro-moth *Grapholita lunulana*; the solitary wasp *Argogorytes fargeii*; the mining bee *Andrena nigriceps*; the snipe-fly *Spania nigra*; and the marsh-flies *Ditaeniella grisescens* and *Tetanocera punctifrons*. The surveys at Maze Park produced three current JNCC-listed species, *viz*. the longhorn beetle *Paracorymbia fulva*; the picture-winged fly *Orellia falcata*; and the marsh-fly *Tetanocera punctifrons*.

Other noteworthy finds included the following local flies: *Micromorphus albipes* at Maze Park; and *Dolichopus claviger*, *Hilara albipennis*, *Micromorphus albipes* and *Oxycera trilineata* at Gravel Hole. *Hilara albipennis* and *Micromorphus albipes* were formerly JNCC-listed in Falk (1991), but were subsequently excluded in a status review by Falk & Crossley (2005).

The combined results of the surveys at Gravel Hole and Maze Park produced six Lepidoptera species which are currently designated as UK BAP Priority Species in all four countries comprising the UK. These six species were included in the current list of UK BAP Priority Species on the basis that analysis of selected data indicated a recent marked decline in the UK. Nevertheless, none of these are particularly noteworthy species. The butterflies *Erynnis tages* [Dingy Skipper] and *Hipparchia semele* [Grayling] are distinctly local in UK

occurrence, but are currently widespread and not uncommon in the Teesside area, particularly *Erynnis tages*. During the surveys, both species occurred in small numbers at Maze Park; whereas *Erynnis tages* was locally common at Gravel Hole.

Four other UK BAP Priority Species were found at both Gravel Hole and Maze Park, *viz.* the moths *Tyria jacobaeae* [Cinnabar] and *Scotopteryx chenopodiata* [Shaded Broad-bar], and the butterflies *Coenonympha pamphilus* [Small Heath] and *Lasiommata megera* [Wall]. These four species are currently common and widespread in the UK, but have declined in some regions.

SUMMARY TABLES

ORDERS AND NUMBERS OF SPECIES

ORDER	GRAVEL HOLE 2010	GRAVEL HOLE 2012	GRAVEL HOLE 2013	MAZE PARK 2010	MAZE PARK 2012	MAZE PARK 2013
Stylommatophora		1	1			
Isopoda			1			1
Odonata	1		2	3	1	2
Orthoptera	2	1	1	2		1
Dermaptera			1		1	1
Hemiptera	1	1	1	1	3	2
Neuroptera		1			1	1
Mecoptera	1	1	2	1	1	1
Lepidoptera	24	16	26	26	12	31
Coleoptera	2	2	6	4	3	5
Hymenoptera	28	20	44	29	12	35
Diptera	91	51	128	66	49	60
TOTAL	**150**	**94**	**213**	**132**	**83**	**140**

HYMENOPTERAN TARGET FAMILIES AND NUMBERS OF SPECIES

TARGET FAMILIES	GRAVEL HOLE 2010	GRAVEL HOLE 2012	GRAVEL HOLE 2013	MAZE PARK 2010	MAZE PARK 2012	MAZE PARK 2013
Dryinidae						
Embolemidae						
Bethylidae						
Chrysididae				1		
Tiphiidae						
Mutillidae						
Sapygidae						
Formicidae	2	2	4	3	3	4
Pompilidae			1			
Eumenidae	1			1		1
Vespidae	3		3	1		2
Sphecidae	5	1	5	4		3
Colletidae		3		2	1	3
Andrenidae	5	2	8	1		4
Halictidae	5	4	11	5	1	6
Melittidae						
Megachilidae				1	1	
Anthophoridae		1	2	1		3
Apidae	7	7	10	9	6	9
TOTAL	**28**	**20**	**44**	**29**	**12**	**35**

DIPTERAN TARGET FAMILIES AND NUMBERS OF SPECIES

TARGET FAMILIES	GRAVEL HOLE 2010	GRAVEL HOLE 2012	GRAVEL HOLE 2013	MAZE PARK 2010	MAZE PARK 2012	MAZE PARK 2013
Tipulidae	9	2	8	3	3	5
Cylindrotomidae						
Pediciidae	1					1
Limoniidae	3		4	2		
Xylophagidae						
Athericidae						
Rhagionidae	1	2	3			
Tabanidae	1				1	1
Xylomyidae						
Stratiomyidae	3	2	6	3	2	3
Acroceridae						
Bombyliidae	1					1
Therevidae						
Scenopinidae						
Asilidae	1			1	1	1
Dolichopodidae	9	7	17	2	3	1
Syrphidae	27	18	36	27	18	20
Micropezidae	1		1		1	
Conopidae			1	1		1
Ulidiidae	3	1	3	1		
Platystomatidae						
Tephritidae	4	3	8	6	7	8
Phaeomyiidae						
Sciomyzidae	6	1	7	5	2	3
TOTAL	**70**	**36**	**94**	**51**	**38**	**45**

SELECTED POPULAR-INTEREST GROUPS AND NUMBERS OF SPECIES

GROUP	GRAVEL HOLE 2010	GRAVEL HOLE 2012	GRAVEL HOLE 2013	MAZE PARK 2010	MAZE PARK 2012	MAZE PARK 2013
Odonata: Zygoptera	1			2		2
Odonata: Anisoptera			2	1	1	
Orthoptera: Acridoidea	2	1	1	2		1
Orthoptera: Grylloidea						
Lepidoptera: Heterocera	11	6	13	10	6	18
Lepidoptera: Rhopalocera	13	10	13	16	6	13
TOTAL	**27**	**17**	**29**	**31**	**13**	**34**

SPECIES TABLES

286 invertebrate species were recorded from Gravel Hole, 225 were recorded from Maze Park; the following tables enumerate these species. Within the tables, invertebrate orders and families are in general checklist order; within each family, the genera are listed in alphabetical order; and within each genus, the species are also listed in alphabetical order.

Numbers in the columns represent the number of individual invertebrates recorded as a result of the survey. In the case of field records, duplication can occur if the same individuals are recorded on separate survey visits, or seen in more than one survey compartment on the same visit. * = numbers have been estimated in the field, or the total includes estimated numbers. All numbers are for adults or late-stage nymphs, except for *Tyria jacobaeae* at Maze Park during 2010, where the total comprises 3 adults and approximately 10 larvae.

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Arionidae	*Arion ater*	(Linnaeus)		1	39*
Armadillidiidae	*Armadillidium vulgare*	(Latreille)			1
Coenagriidae	*Coenagrion puella*	(Linnaeus)	1		
Libellulidae	*Libellula depressa*	Linnaeus			1
Libellulidae	*Sympetrum striolatum*	(Charpentier)			2
Acrididae	*Chorthippus brunneus*	(Thunberg)	6		
Acrididae	*Omocestus viridulus*	(Linnaeus)	6	6	3
Forficulidae	*Forficula auricularia*	Linnaeus			1
Pentatomidae	*Piezodorus lituratus*	(Fabricius)		3	
Miridae	*Leptopterna dolabrata*	(Linnaeus)			6
Cercopidae	*Cercopis vulnerata*	Illiger	1		
Chrysopidae	*Chrysopa perla*	(Linnaeus)		1	
Panorpidae	*Panorpa communis*	Linnaeus		2	1
Panorpidae	*Panorpa germanica*	Linnaeus	3		3
Zygaenidae	*Zygaena filipendulae*	(Linnaeus)	1	4	16
Zygaenidae	*Zygaena lonicerae*	(Scheven)			6
Sesiidae	*Sesia bembeciformis*	(Hübner)			1
Yponomeutidae	*Plutella xylostella*	(Linnaeus)			1
Tortricidae	*Celypha lacunana*	(Denis & Schiffermüller)			1
Tortricidae	*Dichrorampha plumbana*	(Scopoli)			1
Tortricidae	*Grapholita lunulana*	(Denis & Schiffermüller)			1
Crambidae	*Agriphila tristella*	(Denis & Schiffermüller)			1
Crambidae	*Chrysoteuchia culmella*	(Linnaeus)		1	
Crambidae	*Udea lutealis*	(Hübner)	2	2	5
Pterophoridae	*Stenoptilia bipunctidactyla*	(Scopoli)	1	2	5
Geometridae	*Camptogramma bilineata*	(Linnaeus)		1	
Geometridae	*Epirrhoe alternata*	(Müller)			1
Geometridae	*Lomaspilis marginata*	(Linnaeus)	1		
Geometridae	*Lomographa temerata*	(Denis & Schiffermüller)	1		
Geometridae	*Scotopteryx chenopodiata*	(Linnaeus)		9	8
Arctiidae	*Tyria jacobaeae*	(Linnaeus)	1		
Noctuidae	*Autographa gamma*	(Linnaeus)	1		2
Noctuidae	*Callistege mi*	(Clerck)	1		
Noctuidae	*Catocala nupta*	(Linnaeus)	1		
Noctuidae	*Panemeria tenebrata*	(Scopoli)	2		
Hesperiidae	*Erynnis tages*	(Linnaeus)	18*	2	6
Hesperiidae	*Ochlodes venata*	(Bremer & Grey)	4		
Hesperiidae	*Thymelicus sylvestris*	(Poda)	6*	6	86*
Pieridae	*Pieris brassicae*	(Linnaeus)	3		3
Pieridae	*Pieris napi*	(Linnaeus)	6*		1
Pieridae	*Pieris rapae*	(Linnaeus)	2	1	6

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Lycaenidae	*Lycaena phlaeas*	(Linnaeus)	1		
Lycaenidae	*Polyommatus icarus*	(Rottemburg)	30*	1	19
Nymphalidae	*Aglais urticae*	(Linnaeus)	1		4
Nymphalidae	*Inachis io*	(Linnaeus)		3	3
Nymphalidae	*Vanessa atalanta*	(Linnaeus)		1	
Satyridae	*Aphantopus hyperantus*	(Linnaeus)	2	8	82*
Satyridae	*Coenonympha pamphilus*	(Linnaeus)	25*	1	18*
Satyridae	*Lasiommata megera*	(Linnaeus)			1
Satyridae	*Maniola jurtina*	(Linnaeus)	5	2	8
Satyridae	*Pararge aegeria*	(Linnaeus)	34*	3	3
Carabidae	*Amara familiaris*	(Duftschmid)			1
Carabidae	*Asaphidion pallipes*	(Duftschmid)			4
Cantharidae	*Rhagonycha fulva*	(Scopoli)	5	53*	38*
Coccinellidae	*Adalia bipunctata*	(Linnaeus)			2
Coccinellidae	*Coccinella septempunctata*	Linnaeus	2	9	15
Coccinellidae	*Propylea quatuordecimpunctata*	(Linnaeus)			1
Formicidae	*Formica lemani*	Bondroit	3		21
Formicidae	*Lasius flavus*	(Fabricius)		26*	2
Formicidae	*Lasius niger*	(Linnaeus)			7
Formicidae	*Myrmica lobicornis*	Nylander		1	
Formicidae	*Myrmica rubra*	(Linnaeus)	1		
Formicidae	*Myrmica ruginodis*	Nylander			3
Pompilidae	*Evagetes crassicornis*	(Shuckard)			1
Vespidae	*Dolichovespula sylvestris*	(Scopoli)			1
Vespidae	*Vespula germanica*	(Fabricius)	1		1
Vespidae	*Vespula rufa*	(Linnaeus)	1		
Vespidae	*Vespula vulgaris*	(Linnaeus)	1		1
Sphecidae	*Argogorytes fargeii*	(Shuckard)	4		
Sphecidae	*Crabro peltarius*	(Schreber)	2		1
Sphecidae	*Crossocerus pusillus*	Lepeletier & Brullé	1		
Sphecidae	*Crossocerus tarsatus*	(Shuckard)			1
Sphecidae	*Mellinus arvensis*	(Linnaeus)		1	5
Sphecidae	*Oxybelus uniglumis*	(Linnaeus)	1		4
Sphecidae	*Trypoxylon attenuatum*	Smith	1		1
Colletidae	*Hylaeus brevicornis*	Nylander		1	
Colletidae	*Hylaeus communis*	Nylander		1	
Colletidae	*Hylaeus hyalinatus*	Smith		1	
Andrenidae	*Andrena barbilabris*	(Kirby)			1
Andrenidae	*Andrena carantonica*	Pérez			2
Andrenidae	*Andrena chrysosceles*	(Kirby)	2	1	1
Andrenidae	*Andrena fulva*	(Müller)	1		
Andrenidae	*Andrena haemorrhoa*	(Fabricius)	1	1	6
Andrenidae	*Andrena minutula*	(Kirby)	1		6
Andrenidae	*Andrena nigriceps*	(Kirby)			1
Andrenidae	*Andrena semilaevis*	Pérez	2		
Andrenidae	*Andrena subopaca*	Nylander			2
Andrenidae	*Andrena wilkella*	(Kirby)			2
Halictidae	*Halictus rubicundus*	(Christ)	1		1
Halictidae	*Halictus tumulorum*	(Linnaeus)			2
Halictidae	*Lasioglossum albipes*	(Fabricius)		3	9
Halictidae	*Lasioglossum calceatum*	(Scopoli)			1

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Halictidae	*Lasioglossum cupromicans*	(Pérez)			3
Halictidae	*Lasioglossum fratellum*	(Pérez)	1	5	9
Halictidae	*Lasioglossum fulvicorne*	(Kirby)		1	
Halictidae	*Lasioglossum leucopus*	(Kirby)			4
Halictidae	*Lasioglossum leucozonium*	(Schrank)	1	2	15
Halictidae	*Lasioglossum nitidiusculum*	(Kirby)	1		
Halictidae	*Lasioglossum rufitarse*	(Zetterstedt)			2
Halictidae	*Lasioglossum villosulum*	(Kirby)	1		4
Halictidae	*Sphecodes puncticeps*	Thompson			2
Anthophoridae	*Nomada flava*	Panzer		4	1
Anthophoridae	*Nomada marshamella*	(Kirby)			1
Apidae	*Apis mellifera*	Linnaeus	5	34*	2
Apidae	*Bombus bohemicus*	Seidl			1
Apidae	*Bombus hypnorum*	(Linnaeus)		4	1
Apidae	*Bombus lapidarius*	(Linnaeus)	53*	28	113*
Apidae	*Bombus lucorum*	(Linnaeus)	7	10	1
Apidae	*Bombus pascuorum*	(Scopoli)	78*	63*	84*
Apidae	*Bombus pratorum*	(Linnaeus)	3	1	1
Apidae	*Bombus sylvestris*	(Lepeletier)			1
Apidae	*Bombus terrestris*	(Linnaeus)	2	6	6
Apidae	*Bombus vestalis*	(Geoffroy)	1		1
Tipulidae	*Nephrotoma appendiculata*	(Pierre)	2		2
Tipulidae	*Nephrotoma flavescens*	(Linnaeus)			1
Tipulidae	*Nephrotoma scurra*	(Meigen)	1		2
Tipulidae	*Nephrotoma submaculosa*	Edwards			1
Tipulidae	*Tipula couckei*	Tonnoir	1		
Tipulidae	*Tipula lateralis*	Meigen			4
Tipulidae	*Tipula oleracea*	Linnaeus	2		24
Tipulidae	*Tipula paludosa*	Meigen	5	2	
Tipulidae	*Tipula rufina*	Meigen	1		
Tipulidae	*Tipula scripta*	Meigen			1
Tipulidae	*Tipula submarmorata*	Schummel	1		
Tipulidae	*Tipula varipennis*	Meigen	2		
Tipulidae	*Tipula vernalis*	Meigen	13	3	2
Pediciidae	*Tricyphona immaculata*	(Meigen)	16		
Limoniidae	*Cheilotrichia cinerascens*	(Meigen)			4
Limoniidae	*Dicranomyia chorea*	(Meigen)	4		
Limoniidae	*Erioconopa trivialis*	(Meigen)			1
Limoniidae	*Limonia nubeculosa*	Meigen	3		
Limoniidae	*Metalimnobia quadrinotata*	(Meigen)			1
Limoniidae	*Rhipidia maculata*	Meigen	3		1
Bibionidae	*Bibio johannis*	(Linnaeus)	30		
Bibionidae	*Bibio lanigerus*	Meigen	2		1
Bibionidae	*Bibio leucopterus*	(Meigen)	1		
Bibionidae	*Bibio marci*	(Linnaeus)			1
Bibionidae	*Bibio pomonae*	(Fabricius)			1
Bibionidae	*Bibio varipes*	Meigen			1
Bibionidae	*Dilophus febrilis*	(Linnaeus)	3	2	11
Bibionidae	*Dilophus femoratus*	Meigen	5		
Anisopodidae	*Sylvicola fenestralis*	(Scopoli)			1
Culicidae	*Culex pipiens*	Linnaeus	1		

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Culicidae	*Culiseta annulata*	(Schrank)	1		
Rhagionidae	*Chrysopilus cristatus*	(Fabricius)	7	2	4
Rhagionidae	*Rhagio tringarius*	(Linnaeus)		2	1
Rhagionidae	*Spania nigra*	Meigen			1
Tabanidae	*Haematopota pluvialis*	(Linnaeus)	1		
Stratiomyidae	*Beris chalybata*	(Forster)	19		6
Stratiomyidae	*Beris geniculata*	Haliday		1	2
Stratiomyidae	*Beris vallata*	(Forster)			6
Stratiomyidae	*Chloromyia formosa*	(Scopoli)	1		3
Stratiomyidae	*Microchrysa flavicornis*	(Meigen)	1		
Stratiomyidae	*Nemotelus nigrinus*	Fallén		1	7
Stratiomyidae	*Oxycera trilineata*	(Linnaeus)			2
Bombyliidae	*Bombylius major*	Linnaeus	1		
Asilidae	*Leptogaster cylindrica*	(De Geer)	8		
Hybotidae	*Bicellaria vana*	Collin			58
Hybotidae	*Hybos culiciformis*	(Fabricius)	7	2	2
Hybotidae	*Ocydromia glabricula*	(Fallén)	1		
Hybotidae	*Platypalpus annulatus*	(Fallén)			1
Hybotidae	*Platypalpus verralli*	(Collin)			2
Empididae	*Empis caudatula*	Loew			13
Empididae	*Empis livida*	Linnaeus	1	4	2
Empididae	*Empis nigripes*	Fabricius	6		1
Empididae	*Empis nuntia*	Meigen			2
Empididae	*Empis opaca*	Meigen			9
Empididae	*Empis punctata*	Meigen			2
Empididae	*Empis tessellata*	Fabricius	3		
Empididae	*Empis trigramma*	Wiedemann	5	2	2
Empididae	*Hilara albipennis*	von Roser			1
Empididae	*Hilara longivittata*	Zetterstedt		2	
Empididae	*Hilara maura*	(Fabricius)		2	
Empididae	*Rhamphomyia albohirta*	Collin			8
Empididae	*Rhamphomyia nigripennis*	(Fabricius)		3	
Empididae	*Rhamphomyia sulcata*	(Meigen)		1	2
Empididae	*Rhamphomyia variabilis*	(Fallén)			2
Dolichopodidae	*Argyra argyria*	(Meigen)			2
Dolichopodidae	*Campsicnemus loripes*	(Haliday)			1
Dolichopodidae	*Chrysotus blepharosceles*	Kowarz			1
Dolichopodidae	*Chrysotus gramineus*	(Fallén)	4		4
Dolichopodidae	*Chrysotus neglectus*	(Wiedemann)		8	12
Dolichopodidae	*Dolichopus claviger*	Stannius	1	1	
Dolichopodidae	*Dolichopus griseipennis*	Stannius	1		1
Dolichopodidae	*Dolichopus latilimbatus*	Macquart			1
Dolichopodidae	*Dolichopus plumipes*	(Scopoli)	4		1
Dolichopodidae	*Dolichopus popularis*	Wiedemann	1		
Dolichopodidae	*Dolichopus subpennatus*	d'Assis-Fonseca			3
Dolichopodidae	*Dolichopus trivialis*	Haliday	1		1
Dolichopodidae	*Dolichopus ungulatus*	(Linnaeus)	1	2	31
Dolichopodidae	*Dolichopus vitripennis*	Meigen			1
Dolichopodidae	*Hercostomus nigripennis*	(Fallén)			1
Dolichopodidae	*Medetera jacula*	(Fallén)		1	
Dolichopodidae	*Micromorphus albipes*	(Zetterstedt)		1	14

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Dolichopodidae	*Rhaphium caliginosum*	Meigen			14
Dolichopodidae	*Sciapus platypterus*	(Fabricius)	1	1	
Dolichopodidae	*Sympycnus desoutteri*	Parent	1	1	20
Dolichopodidae	*Xanthochlorus ornatus*	(Haliday)			1
Lonchopteridae	*Lonchoptera bifurcata*	(Fallén)		1	3
Lonchopteridae	*Lonchoptera lutea*	Panzer			1
Syrphidae	*Cheilosia albitarsis*	(Meigen)			1
Syrphidae	*Cheilosia bergenstammi*	Becker	2	1	6
Syrphidae	*Cheilosia illustrata*	(Harris)	2		
Syrphidae	*Cheilosia pagana*	(Meigen)	1		
Syrphidae	*Cheilosia vernalis*	(Fallén)		1	3
Syrphidae	*Chrysotoxum bicinctum*	(Linnaeus)			1
Syrphidae	*Epistrophe eligans*	(Harris)	2		
Syrphidae	*Episyrphus balteatus*	(De Geer)	12	18*	94*
Syrphidae	*Eristalis abusivus*	Collin		1	1
Syrphidae	*Eristalis arbustorum*	(Linnaeus)		9	8
Syrphidae	*Eristalis horticola*	(De Geer)	1	5	
Syrphidae	*Eristalis interruptus*	(Poda)		4	7
Syrphidae	*Eristalis intricarius*	(Linnaeus)		5	1
Syrphidae	*Eristalis pertinax*	(Scopoli)	2	8	1
Syrphidae	*Eristalis tenax*	(Linnaeus)	3	49*	
Syrphidae	*Eupeodes corollae*	(Fabricius)	2		3
Syrphidae	*Eupeodes latifasciatus*	(Macquart)			1
Syrphidae	*Eupeodes luniger*	(Meigen)	1		
Syrphidae	*Helophilus hybridus*	Loew	1	2	7
Syrphidae	*Helophilus pendulus*	(Linnaeus)	4	108*	15
Syrphidae	*Lejogaster metallina*	(Fabricius)			2
Syrphidae	*Leucozona lucorum*	(Linnaeus)	3		1
Syrphidae	*Melanostoma mellinum*	(Linnaeus)	7	6	33
Syrphidae	*Melanostoma scalare*	(Fabricius)	3		43
Syrphidae	*Neoascia podagrica*	(Fabricius)	1	2	8
Syrphidae	*Paragus haemorrhous*	Meigen	2		4
Syrphidae	*Pipiza noctiluca*	(Linnaeus)			1
Syrphidae	*Platycheirus albimanus*	(Fabricius)		1	3
Syrphidae	*Platycheirus angustatus*	(Zetterstedt)	3		1
Syrphidae	*Platycheirus clypeatus*	(Meigen)	8	3	6
Syrphidae	*Platycheirus granditarsus*	(Forster)	1		1
Syrphidae	*Platycheirus manicatus*	(Meigen)	1		5
Syrphidae	*Platycheirus peltatus*	(Meigen)			1
Syrphidae	*Platycheirus rosarum*	(Fabricius)			1
Syrphidae	*Platycheirus scutatus*	(Meigen)	5		1
Syrphidae	*Platycheirus tarsalis*	(Schummel)			1
Syrphidae	*Rhingia campestris*	Meigen		1	
Syrphidae	*Scaeva pyrastri*	(Linnaeus)	1		1
Syrphidae	*Sphaerophoria interrupta*	(Fabricius)			6
Syrphidae	*Sphaerophoria scripta*	(Linnaeus)			3
Syrphidae	*Syritta pipiens*	(Linnaeus)	1		6
Syrphidae	*Syrphus ribesii*	(Linnaeus)	9	5	1
Syrphidae	*Syrphus torvus*	Osten Sacken			1
Syrphidae	*Syrphus vitripennis*	Meigen	2		
Syrphidae	*Volucella pellucens*	(Linnaeus)	3		

TABLE OF INVERTEBRATE SPECIES FROM GRAVEL HOLE

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Pipunculidae	*Pipunculus thomsoni*	Becker			1
Micropezidae	*Micropeza corrigiolata*	(Linnaeus)	1		8
Psilidae	*Loxocera albiseta*	(Schrank)	2		
Psilidae	*Loxocera aristata*	(Panzer)	1		
Conopidae	*Conops quadrifasciatus*	De Geer			1
Ulidiidae	*Herina frondescentiae*	(Linnaeus)	56	6	93
Ulidiidae	*Herina germinationis*	(Rossi)	2		2
Ulidiidae	*Herina lugubris*	(Meigen)	5		6
Tephritidae	*Anomoia purmunda*	(Harris)	1		
Tephritidae	*Chaetostomella cylindrica*	(Robineau-Desvoidy)	1	2	6
Tephritidae	*Euleia heraclei*	(Linnaeus)			1
Tephritidae	*Tephritis cometa*	(Loew)			1
Tephritidae	*Tephritis formosa*	(Loew)			1
Tephritidae	*Tephritis neesii*	(Meigen)	4	7	9
Tephritidae	*Tephritis vespertina*	(Loew)			3
Tephritidae	*Urophora jaceana*	(Hering)	3	7	7
Tephritidae	*Urophora stylata*	(Fabricius)			2
Sciomyzidae	*Ditaeniella grisescens*	(Meigen)			1
Sciomyzidae	*Euthycera fumigata*	(Scopoli)	1		
Sciomyzidae	*Hydromya dorsalis*	(Fabricius)			2
Sciomyzidae	*Ilione albiseta*	(Scopoli)	2		12
Sciomyzidae	*Limnia unguicornis*	(Scopoli)	5		
Sciomyzidae	*Pherbellia cinerella*	(Fallén)	33	4	14
Sciomyzidae	*Renocera pallida*	(Fallén)			1
Sciomyzidae	*Tetanocera elata*	(Fabricius)	3		3
Sciomyzidae	*Tetanocera punctifrons*	Rondani	11		9
Sepsidae	*Sepsis cynipsea*	(Linnaeus)			4
Sepsidae	*Sepsis flavimana*	Meigen		1	
Sepsidae	*Sepsis fulgens*	Meigen	1		1
Sepsidae	*Themira annulipes*	(Meigen)			4
Opomyzidae	*Opomyza florum*	(Fabricius)	3		
Opomyzidae	*Opomyza germinationis*	(Linnaeus)		1	1
Muscidae	*Graphomya maculata*	(Scopoli)		1	
Calliphoridae	*Calliphora vicina*	Robineau-Desvoidy	3	2	1
Calliphoridae	*Calliphora vomitoria*	(Linnaeus)		2	
Calliphoridae	*Lucilia caesar*	(Linnaeus)	1		1
Calliphoridae	*Pollenia rudis*	(Fabricius)	1		
Tachinidae	*Eriothrix rufomaculata*	(De Geer)	1	1	7
Tachinidae	*Ramonda spathulata*	(Fallén)			1
Tachinidae	*Siphona geniculata*	(De Geer)			6
Tachinidae	*Triarthria setipennis*	(Fallén)			1

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Armadillidiidae	*Armadillidium vulgare*	(Latreille)			1
Coenagriidae	*Coenagrion puella*	(Linnaeus)			1
Coenagriidae	*Enallagma cyathigerum*	(Charpentier)	2		
Coenagriidae	*Ischnura elegans*	(Vander Linden)	1		
Coenagriidae	*Pyrrhosoma nymphula*	(Sulzer)			1
Libellulidae	*Sympetrum striolatum*	(Charpentier)	3	2	
Acrididae	*Chorthippus brunneus*	(Thunberg)	3		2

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Acrididae	*Myrmeleotettix maculatus*	(Thunberg)	1		
Forficulidae	*Forficula auricularia*	Linnaeus		1	1
Pentatomidae	*Dolycoris baccarum*	(Linnaeus)			1
Pentatomidae	*Piezodorus lituratus*	(Fabricius)		1	
Miridae	*Closterotomus norwegicus*	(Gmelin)		16	
Miridae	*Leptopterna dolabrata*	(Linnaeus)		1	2
Cercopidae	*Cercopis vulnerata*	Illiger	3		
Chrysopidae	*Chrysopa perla*	(Linnaeus)		1	2
Panorpidae	*Panorpa communis*	Linnaeus		4	2
Panorpidae	*Panorpa germanica*	Linnaeus	2		
Zygaenidae	*Zygaena filipendulae*	(Linnaeus)	1		1
Zygaenidae	*Zygaena lonicerae*	(Scheven)		2	6
Glyphipterigidae	*Glyphipterix simpliciella*	(Stephens)			4
Yponomeutidae	*Plutella xylostella*	(Linnaeus)			1
Tortricidae	*Acleris forsskaleana*	(Linnaeus)			1
Tortricidae	*Ancylis badiana*	(Denis & Schiffermüller)			7
Tortricidae	*Aphelia paleana*	(Hübner)	1		
Tortricidae	*Celypha lacunana*	(Denis & Schiffermüller)		1	
Tortricidae	*Epiblema costipunctana*	(Haworth)			2
Tortricidae	*Grapholita compositella*	(Fabricius)	1	2	3
Tortricidae	*Grapholita lunulana*	(Denis & Schiffermüller)			2
Crambidae	*Agriphila tristella*	(Denis & Schiffermüller)	1		4
Crambidae	*Chrysoteuchia culmella*	(Linnaeus)	1		
Crambidae	*Crambus lathoniellus*	(Zincken)		1	2
Crambidae	*Udea lutealis*	(Hübner)	1	3	2
Pyralidae	*Myelois circumvoluta*	(Fourcroy)	1		
Pterophoridae	*Platyptilia gonodactyla*	(Denis & Schiffermüller)			1
Geometridae	*Epirrhoe alternata*	(Müller)			1
Geometridae	*Scotopteryx chenopodiata*	(Linnaeus)	1	7	16
Arctiidae	*Tyria jacobaeae*	(Linnaeus)	13*		
Noctuidae	*Autographa gamma*	(Linnaeus)	1		2
Noctuidae	*Callistege mi*	(Clerck)			1
Noctuidae	*Noctua interjecta*	Schawerda			1
Hesperiidae	*Erynnis tages*	(Linnaeus)	6*		3
Hesperiidae	*Ochlodes venata*	(Bremer & Grey)	5		
Hesperiidae	*Thymelicus sylvestris*	(Poda)	1	1	19*
Pieridae	*Pieris brassicae*	(Linnaeus)			3
Pieridae	*Pieris napi*	(Linnaeus)	18*		7
Pieridae	*Pieris rapae*	(Linnaeus)	6	2	3
Lycaenidae	*Lycaena phlaeas*	(Linnaeus)	1	1	
Lycaenidae	*Polyommatus icarus*	(Rottemburg)	37*		9
Nymphalidae	*Aglais urticae*	(Linnaeus)	1		3
Nymphalidae	*Inachis io*	(Linnaeus)	5		2
Nymphalidae	*Polygonia c-album*	(Linnaeus)	1		
Satyridae	*Aphantopus hyperantus*	(Linnaeus)	2	3	8
Satyridae	*Coenonympha pamphilus*	(Linnaeus)	39*		14
Satyridae	*Hipparchia semele*	(Linnaeus)	1		1
Satyridae	*Lasiommata megera*	(Linnaeus)	5		1
Satyridae	*Maniola jurtina*	(Linnaeus)	33*	2	26*
Satyridae	*Pararge aegeria*	(Linnaeus)	6	1	
Cantharidae	*Rhagonycha fulva*	(Scopoli)	55*	6	80*

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Coccinellidae	*Adalia bipunctata*	(Linnaeus)	1		
Coccinellidae	*Coccinella septempunctata*	Linnaeus	11	10	18
Coccinellidae	*Propylea quatuordecimpunctata*	(Linnaeus)			3
Coccinellidae	*Psyllobora vigintiduopunctata*	(Linnaeus)	1	3	1
Cerambycidae	*Paracorymbia fulva*	(De Geer)			3
Chrysididae	*Chrysis impressa*	Schenck	2		
Formicidae	*Formica lemani*	Bondroit	30	2	30
Formicidae	*Lasius niger*	(Linnaeus)	1		1
Formicidae	*Myrmica rubra*	(Linnaeus)	3	1	1
Formicidae	*Myrmica ruginodis*	Nylander		2	5
Eumenidae	*Ancistrocerus gazella*	(Panzer)			1
Eumenidae	*Ancistrocerus parietum*	(Linnaeus)	1		
Vespidae	*Dolichovespula sylvestris*	(Scopoli)	2		1
Vespidae	*Vespula vulgaris*	(Linnaeus)			1
Sphecidae	*Crossocerus podagricus*	(Vander Linden)			1
Sphecidae	*Ectemnius continuus*	(Fabricius)	1		1
Sphecidae	*Ectemnius dives*	(Lepeletier & Brullé)	4		
Sphecidae	*Mimumesa dahlbomi*	(Wesmael)	1		
Sphecidae	*Trypoxylon attenuatum*	Smith	1		1
Colletidae	*Colletes daviesanus*	Smith			1
Colletidae	*Hylaeus brevicornis*	Nylander			1
Colletidae	*Hylaeus communis*	Nylander	1	1	
Colletidae	*Hylaeus hyalinatus*	Smith	2		1
Andrenidae	*Andrena bicolor*	Fabricius			1
Andrenidae	*Andrena carantonica*	Pérez			1
Andrenidae	*Andrena minutula*	(Kirby)	1		3
Andrenidae	*Andrena subopaca*	Nylander			1
Halictidae	*Halictus rubicundus*	(Christ)			1
Halictidae	*Halictus tumulorum*	(Linnaeus)			1
Halictidae	*Lasioglossum albipes*	(Fabricius)	2	1	1
Halictidae	*Lasioglossum cupromicans*	(Pérez)	1		1
Halictidae	*Lasioglossum leucopus*	(Kirby)	2		1
Halictidae	*Lasioglossum leucozonium*	(Schrank)			1
Halictidae	*Lasioglossum morio*	(Fabricius)	1		
Halictidae	*Lasioglossum villosulum*	(Kirby)	1		
Megachilidae	*Megachile centuncularis*	(Linnaeus)	1		
Megachilidae	*Megachile willughbiella*	(Kirby)		1	
Anthophoridae	*Nomada flava*	Panzer			2
Anthophoridae	*Nomada flavoguttata*	(Kirby)			4
Anthophoridae	*Nomada leucophthalma*	(Kirby)			1
Anthophoridae	*Nomada marshamella*	(Kirby)	2		
Apidae	*Apis mellifera*	Linnaeus	18*	46*	7
Apidae	*Bombus bohemicus*	Seidl	1		1
Apidae	*Bombus hortorum*	(Linnaeus)	1		
Apidae	*Bombus hypnorum*	(Linnaeus)			1
Apidae	*Bombus jonellus*	(Kirby)	1		
Apidae	*Bombus lapidarius*	(Linnaeus)	61*	5	39*
Apidae	*Bombus lucorum*	(Linnaeus)	14*	6	2
Apidae	*Bombus pascuorum*	(Scopoli)	52*	21*	22
Apidae	*Bombus pratorum*	(Linnaeus)	2	2	1
Apidae	*Bombus terrestris*	(Linnaeus)	4	1	5

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Apidae	*Bombus vestalis*	(Geoffroy)			3
Tipulidae	*Nephrotoma appendiculata*	(Pierre)		2	6
Tipulidae	*Nephrotoma flavescens*	(Linnaeus)			5
Tipulidae	*Tipula fascipennis*	Meigen		6	
Tipulidae	*Tipula lunata*	Linnaeus	1		
Tipulidae	*Tipula oleracea*	Linnaeus	2		2
Tipulidae	*Tipula paludosa*	Meigen		1	
Tipulidae	*Tipula varipennis*	Meigen			1
Tipulidae	*Tipula vernalis*	Meigen	29		25
Pediciidae	*Tricyphona immaculata*	(Meigen)			1
Limoniidae	*Limonia phragmitidis*	(Schrank)	1		
Limoniidae	*Phylidorea ferruginea*	(Meigen)	1		
Bibionidae	*Bibio johannis*	(Linnaeus)		1	13
Bibionidae	*Bibio marci*	(Linnaeus)		54*	2
Bibionidae	*Dilophus febrilis*	(Linnaeus)	3		1
Bibionidae	*Dilophus femoratus*	Meigen			1
Tabanidae	*Chrysops relictus*	Meigen		1	2
Stratiomyidae	*Beris chalybata*	(Forster)	3		1
Stratiomyidae	*Beris geniculata*	Haliday	1		
Stratiomyidae	*Beris vallata*	(Forster)		2	1
Stratiomyidae	*Chloromyia formosa*	(Scopoli)	1		
Stratiomyidae	*Chorisops tibialis*	(Meigen)		2	10
Bombyliidae	*Bombylius major*	Linnaeus			1
Asilidae	*Leptogaster cylindrica*	(De Geer)	28	1	5
Hybotidae	*Platypalpus agilis*	(Meigen)			2
Empididae	*Empis caudatula*	Loew	2		1
Empididae	*Empis livida*	Linnaeus	3	10	3
Empididae	*Empis nuntia*	Meigen	5		1
Empididae	*Empis tessellata*	Fabricius	7	1	1
Empididae	*Empis trigramma*	Wiedemann	1		
Empididae	*Hilara maura*	(Fabricius)	1		
Dolichopodidae	*Dolichopus griseipennis*	Stannius	3	1	
Dolichopodidae	*Dolichopus trivialis*	Haliday		1	
Dolichopodidae	*Hydrophorus balticus*	(Meigen)	1		
Dolichopodidae	*Micromorphus albipes*	(Zetterstedt)			1
Dolichopodidae	*Scellus notatus*	(Fabricius)		2	
Lonchopteridae	*Lonchoptera bifurcata*	(Fallén)	1		
Lonchopteridae	*Lonchoptera lutea*	Panzer		4	
Syrphidae	*Cheilosia bergenstammi*	Becker			1
Syrphidae	*Cheilosia griseiventris*	Loew	1		
Syrphidae	*Cheilosia lasiopa*	Kowarz			1
Syrphidae	*Cheilosia pagana*	(Meigen)		2	1
Syrphidae	*Cheilosia proxima*	(Zetterstedt)			1
Syrphidae	*Cheilosia vernalis*	(Fallén)	1	1	4
Syrphidae	*Chrysotoxum bicinctum*	(Linnaeus)	1		
Syrphidae	*Epistrophe eligans*	(Harris)	1		
Syrphidae	*Episyrphus balteatus*	(De Geer)	7	2	2
Syrphidae	*Eristalinus sepulchralis*	(Linnaeus)		1	
Syrphidae	*Eristalis arbustorum*	(Linnaeus)	2	12	
Syrphidae	*Eristalis interruptus*	(Poda)		3	
Syrphidae	*Eristalis intricarius*	(Linnaeus)	1		

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Syrphidae	*Eristalis pertinax*	(Scopoli)		6	1
Syrphidae	*Eristalis tenax*	(Linnaeus)	42*	15	
Syrphidae	*Eupeodes latifasciatus*	(Macquart)	3		
Syrphidae	*Eupeodes luniger*	(Meigen)	5		
Syrphidae	*Helophilus hybridus*	Loew		2	
Syrphidae	*Helophilus pendulus*	(Linnaeus)	4	34*	1
Syrphidae	*Helophilus trivittatus*	(Fabricius)		2	
Syrphidae	*Leucozona lucorum*	(Linnaeus)	1		
Syrphidae	*Melangyna compositarum*	(Verrall)	1		
Syrphidae	*Melanostoma mellinum*	(Linnaeus)	10	10	18
Syrphidae	*Melanostoma scalare*	(Fabricius)		3	11
Syrphidae	*Myathropa florea*	(Linnaeus)	1	2	
Syrphidae	*Paragus haemorrhous*	Meigen	2		6
Syrphidae	*Pipizella viduata*	(Linnaeus)			1
Syrphidae	*Platycheirus albimanus*	(Fabricius)	3	3	
Syrphidae	*Platycheirus angustatus*	(Zetterstedt)	1	3	1
Syrphidae	*Platycheirus clypeatus*	(Meigen)	38		5
Syrphidae	*Platycheirus manicatus*	(Meigen)	1	1	1
Syrphidae	*Platycheirus peltatus*	(Meigen)			1
Syrphidae	*Scaeva pyrastri*	(Linnaeus)	1		
Syrphidae	*Sphaerophoria interrupta*	(Fabricius)	1		8
Syrphidae	*Sphaerophoria scripta*	(Linnaeus)	5		8
Syrphidae	*Syritta pipiens*	(Linnaeus)	3		1
Syrphidae	*Syrphus ribesii*	(Linnaeus)	6	1	
Syrphidae	*Syrphus vitripennis*	Meigen	3		
Syrphidae	*Volucella bombylans*	(Linnaeus)	3		1
Pipunculidae	*Pipunculus campestris*	Latreille	1		
Pipunculidae	*Verrallia aucta*	(Fallén)		1	
Micropezidae	*Micropeza corrigiolata*	(Linnaeus)		2	
Conopidae	*Sicus ferrugineus*	(Linnaeus)	1		1
Pallopteridae	*Palloptera modesta*	(Meigen)	1		1
Pallopteridae	*Palloptera quinquemaculata*	(Macquart)	2		
Ulidiidae	*Herina lugubris*	(Meigen)	1		
Tephritidae	*Campiglossa misella*	(Loew)	1	1	
Tephritidae	*Chaetostomella cylindrica*	(Robineau-Desvoidy)	3	1	2
Tephritidae	*Euleia heraclei*	(Linnaeus)		1	
Tephritidae	*Orellia falcata*	(Scopoli)	1		1
Tephritidae	*Philophylla caesio*	(Harris)		1	
Tephritidae	*Rhagoletis alternata*	(Fallén)		1	
Tephritidae	*Tephritis cometa*	(Loew)			1
Tephritidae	*Tephritis formosa*	(Loew)		1	1
Tephritidae	*Tephritis neesii*	(Meigen)			1
Tephritidae	*Tephritis vespertina*	(Loew)	1		
Tephritidae	*Terellia ruficauda*	(Fabricius)		2	2
Tephritidae	*Urophora jaceana*	(Hering)	2		1
Tephritidae	*Urophora stylata*	(Fabricius)	1		
Tephritidae	*Xyphosia miliaria*	(Schrank)			1
Sciomyzidae	*Coremacera marginata*	(Fabricius)	3		1
Sciomyzidae	*Limnia unguicornis*	(Scopoli)	3		
Sciomyzidae	*Pherbellia cinerella*	(Fallén)	24	2	2
Sciomyzidae	*Tetanocera elata*	(Fabricius)	4	1	2

TABLE OF INVERTEBRATE SPECIES FROM MAZE PARK

FAMILY	SPECIES	AUTHOR	2010	2012	2013
Sciomyzidae	*Tetanocera punctifrons*	Rondani	1		
Sepsidae	*Nemopoda nitidula*	(Fallén)			1
Sepsidae	*Sepsis flavimana*	Meigen		1	
Sepsidae	*Sepsis fulgens*	Meigen		1	
Opomyzidae	*Geomyza tripunctata*	Fallén			4
Calliphoridae	*Lucilia caesar*	(Linnaeus)		1	
Calliphoridae	*Lucilia illustris*	(Meigen)	1		
Calliphoridae	*Lucilia richardsi*	Collin	2		
Calliphoridae	*Melinda gentilis*	Robineau-Desvoidy			2
Tachinidae	*Actia pilipennis*	(Fallén)			1
Tachinidae	*Eriothrix rufomaculata*	(De Geer)	7		
Tachinidae	*Gymnocheta viridis*	(Fallén)		1	2
Tachinidae	*Phryxe vulgaris*	(Fallén)		1	
Tachinidae	*Tachina fera*	(Linnaeus)	1		

ACKNOWLEDGEMENTS

I am grateful to the following organisations for permission to publish data here: *Tees Valley Wildlife Trust*, *Buglife – The Invertebrate Conservation Trust* and *INCA* [*Industry Nature Conservation Association*]. In particular, I am grateful to Miss Clare Dinham and Dr. Sarah Henshall of *Buglife*, and Dr. Robert Woods of *INCA*; without whom, the surveys would not have taken place. In connection with my work on the Teesside Brownfield Stepping Stones Project: Dr. Robert Woods and Dr. Sarah Henshall facilitated many parts of the 2010 baseline study; the 2012 monitoring study was entirely organised and facilitated by Dr. Robert Woods; and the 2013 monitoring study was organised and facilitated by Miss Clare Dinham and Dr. Sarah Henshall of *Buglife*.

Most material was identified by Andrew Grayson; but the completeness and acceptability of identifications within the target assemblages would not have been possible without assistance received from the following specialists: Dr. Robert Woods, who was responsible for the identification of some Lepidoptera: Heterocera during all three study years; Dr. Michael E. Archer, who identified or verified of some Hymenoptera: Aculeata from the 2010 and 2012 surveys; Mr. Andy Jukes, who identified some Hymenoptera: Aculeata from the 2013 surveys; Mr. Alan E. Stubbs, who identified some Diptera: Tipuloidea from the 2010 surveys; and Mr. Roy Crossley, who was responsible for the identification or verification of some problematic Diptera from the 2013 surveys.

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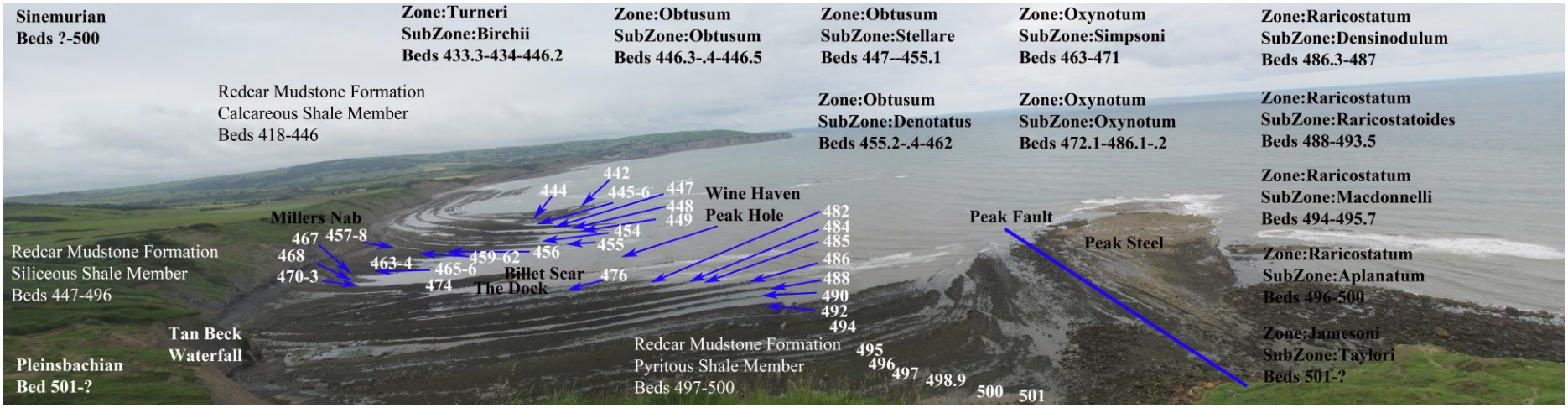
Geology of the Ravenscar Foreshore

Malcolm Birtle

Note:The cliffs at this site are dangerous and should not be approached. It is also possible to be cut off by the tide. The site should only be visited on a falling tide and left at least two hours before high tide. Take all necessary precautions. The author takes no responsibility.

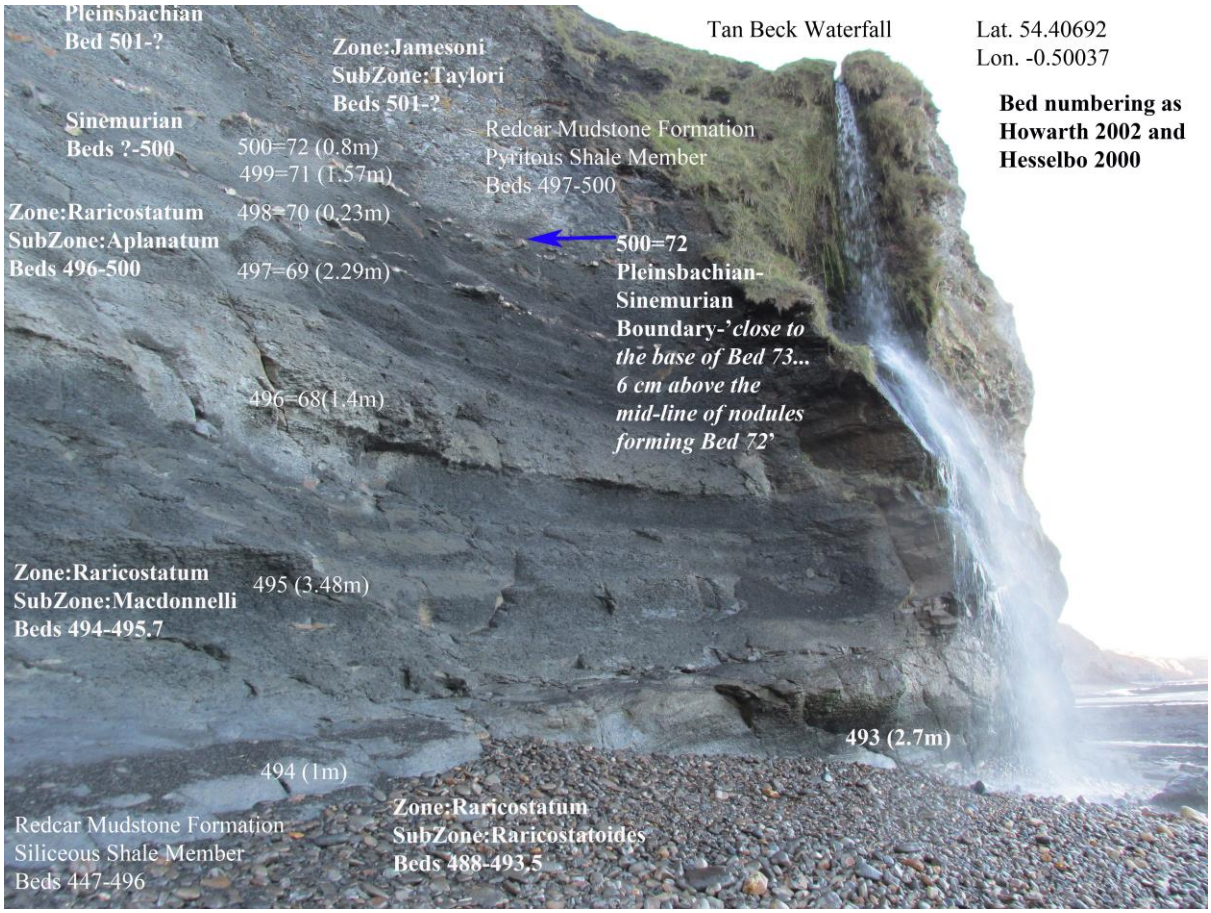
Robin Hoods Bay and Ravescar are internationally recognised sites for geological and palaeontological studies. Fundamental work on the geology, including detailed collecting and mapping activity, was carried out by Leslie Bairstow between 1927 and 1970. Bairstow did not produce a published account of his work. This was carried out by M. K. Howarth in 2002 and remains the definitive account containing detailed stratigraphical descriptions, maps, and palaentological analysis. In 2000 a proposal was submitted to the International Commission on Stratigraphy by Hesselbo, Meister, and Grocke to make the Ravescar section a global stratotype for the Sinemurian-Pliensbachian boundary. This was accepted and makes this part of the coast internationally significant in the effort to establish reference points in geological time. The published proposal adds useful information to the work of Howarth and Bairstow.

On Sunday, 15th June 2014 the Cleveland Naturalists' Field Club held a field meeting at Ravenscar. Some interpretation material was produced to help members increase their understanding of the geology of the cliffs and foreshore. This material consisted of images with overlays of information, and edited stratigraphical descriptions drawn from the publications of Howarth and Hesselbo *et al*. This material is reproduced here for future reference.



Ravenscar Bed Number and Ammonite Zonal Scheme from Howarth 2002 after work by Bairstow.
Image taken from NZ979023

The strata are zoned using ammonites. Fossil zonation is an approach well established in geology and was pioneered in the North Yorkshire Jurassic by Louis (Lewis) 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.



Geology of Tan Beck Waterfall

This cliff section illustrates an important geological boundary or reference point.The strata at Ravenscar were recommended by Hesselbo, Meister, and Grocke as '*potential global stratotype for the Sinemurian-Pliensbachian* boundary' in 2000. Bed 500=72 marks the top of the Sinemurian and the base of the Pliensbachian. Bed 500=72 is the higher line of nodules (doggers) marked by arrow. (Hesselbo *et al* used a different bed numbering scheme from Howarth; 72 is the Hesselbo *et al* bed number, 500 the Howarth Bed number)

Geological time is divided into a hierarchical system of units, called Chronostratigraphical Units. Strata can be allocated to these units based on their age. These units are therefore independent of type of rock, thickness of beds or geographical location. They simply group together strata of the same age. The hiererachy is Eonothem-Erathem-System-Series-Stage-Chronozone. Using Ravenscar as an example the Eonothem is Phanerozoic, Erathem is Mesozoic, System is Jurassic, Series is Early Jurassic, Stages are Sinemurian and Pliensbachian, no Chronozones.

The Chronostratigraphical Units are defined and standardised by the International Commission on Stratigraphy (ICS) of the International Union of Geological Sciences and are therefore applicable on a global scale.

The boundaries between Stages are defined using a Global Boundary Stratotype Section and Point. This is an internationally agreed reference point on a stratigraphic section which defines the lower boundary of a stage on the geologic time scale.

Chronostratigraphical Units are partly based on palaeontological changes, so ammonite zones are particularly relevant. The Global Stratotype recommendation was ratified in 2005 which made the strata at Ravenscar internationally important as a reference point in geological time. The rocks at Ravenscar are in two stages of time

1. Pliensbachian (189.6 +/- 1.5 To 183 +/- 1.5 million years)
2. Sinemurian (196.5 +/- 1 To 189.6 +/- 1.5 million years)

Hesselbo, S.P., Meister, C. and Grocke recommended that '*The best candidate level for the boundary* [between Sinemurian and Pliensbachian] *is at the base of the Taylori Subzone as characterized by the association of Bifericeras donovani and Apoderoceras sp……. Consequently, the boundary between the Pliensbachian and Sinemurian stages is placed very close to the base of Bed 73 (1011) in the Wine Haven section (6 cm above the mid-line of nodules forming Bed 72)'*

The following table contains the descriptions provided by Howarth of beds exposed on the foreshore and lower cliff at Wine Haven (specimen code numbers have been omitted).

Bed Number	Description	Thickness m
501.1	Shale; with calcareous mudstone nodules, 0.05 m thick, at about the middle, which is the highest nodule bed on the foreshore on the west side of the Peak Fault complex in Wine Haven *Bifericeras donovani* Dommergues & Meister, *Apoderoceras subtriangulare* (Young & Bird).	1.83
	Upper Sinemurian -REDCAR MUDSTONE FORMATION-PYRITOUS SHALE MEMBER	
	Zone of *Echioceras raricostatum*	
	Subzone of *Paltechioceras aplanatum*	
500	Flat sideritic mudstone nodules; forms the north-western boundary of The Landing at Bay Town	0.08
499	Shale, with a few large calcareous mudstone nodules; forms the north-western part of the floor of The Landing at Bay Town; 1.83 m thick in Wine Haven *Paltechioceras tardecrescens* (Hauer), *Eoderoceras armatum* (J. Sowerby), *Gleviceras guibalianum* (d'Orbigny).	1.57
498	Shale, with numerous septarian sideritic mudstone nodules; runs down the middle of The Landing *Paltechioceras tardecrescens* (Hauer). *Eoderoceras armatum* (J. Sowerby), *Gemmellaroceras tubellum* (Simpson).	0.23
497	Shale, dark grey with 3 paler stripes of silty shale; contains at least one log of fossil wood 2 m long; forms the southeastern part of the floor of The Landing at Bay Town *Paltechioceras tardecrescens* (Hauer), *Paltechioceras regustatum* (Buckman), *Eoderoceras armatum* (J. Sowerby). *Gleviceras guibalianum* (d'Orbigny), *Gemmellaroceras tubellum* (Simpson)	2.29
	Upper Sinemurian -REDCAR MUDSTONE FORMATION-SILICEOUS SHALE MEMBER	
496	Hard calcified, silty shale; forms the capping to Landing Scar at Bay Town *Gleviceras guibalianum* (d'Orbigny) , *Paltechioceras regustatum* (Buckman) ,*Paltechioceras sp. indet.*.In Wine Haven bed 496 caps a conspicuous scar running from 130 m east of Tan Beck waterfall into the westside of the Peak Fault complex, where it can be divided into:	1.40
496c	Hard calcified, silty shale	0.28
496b	Shale, with a few large sideritic mudstone nodules	0.21

496a	Hard calcified, silty shale, especially hard near base	0.91
	Upper Sinemurian -REDCAR MUDSTONE FORMATION-SILICEOUS SHALE MEMBER	
	Zone of *Echioceras raricostatum*	
	Subzone of *Leptechioceras macdonnelli*	
495.7	Shale *Gemmellaroceras tubellum* (Simpson), *Leptechioceras cf. macdonnelli* (Portlock).	0.84
495.6	Harder shale, with a few sideritic mudstone nodules *Gleviceras guibalianum* (d'Orbigny) (3; CA 3730-32).	0.13
495.5	Shale *Eoderoceras armatum* (J. de C. Sowerby).	0.15
495.4	Harder calcified shale	0.15
495.3	Shale	0.30
495.2	Hard calcified shale	0.36
495.15	Shale *Eoderoceras armatum* (J. de C. Sowerby).	0.43
495.14	Harder shale	0.13
495.13	Shale, with rare sideritic mudstone nodules in Wine Haven *Leptechioceras cf. macdonnelli* (Portlock) .	0.33
495.12	Harder shale	0.13
495.11	Shale	0.53
494	Hard calcified, silty shale; forms the capping of East Scar at Bay Town, and forms a well-marked scar in Wine Haven running eastwards from Tan Beck waterfall, where a few sideritic mudstone nodules occur in the top *Leptechioceras aff. macdonnelli* (Portlock), *Eoderoceras armatum* (J. Sowerby),*Radstockiceras buvignieri* (d'Orbigny).0.20 m	1.00
	Upper Sinemurian -REDCAR MUDSTONE FORMATION-SILICEOUS SHALE MEMBER	
	Zone of *Echioceras raricostatum*	
	Subzone of *Echioceras raricostatoides*	
493.5	Shale *Paltechioceras planum* (Trueman & Williams).	0.86

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Howarth M.K., 2002. '*The Lower Lias of Robin Hood's Bay,Yorkshire, and the work of Leslie Bairstow*' Bull. Nat. Hist. Mus. Lond. (Geol.) **58**(2): 81-152

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Geology and Palaeontology of Topman Steel, West Runswick Bay

Malcolm Birtle

Note:The cliffs at this site are dangerous and should not be approached. It is also possible to be cut off by the tide. The site should only be visited on a falling tide and left at least two hours before high tide. Take all necessary precautions. The author takes no responsibility.

In 1962 M. K. Howarth published a detailed description of the biostratigraphy of the Jet Rock and Alum Shale series in the Lower Jurassic strata of the North Yorkshire coast. This description included the rocks exposed at Topman Steel (NZ811164) which is the foreshore scar West of Runswick village. The following table contains the descriptions (reproduced from Howarth 1962) of beds exposed on the foreshore and lower cliff at Topman Steel (specimen code numbers have been omitted).

Bed Number	Description	Ft Ins
	Bituminous Shales	
43.	Shale, grey, bituminous. There is a row, 4 feet below the top, of very widely scattered calcareous and pyritic doggers, each usually formed around a very large, uncrushed body chamber of *Phylloceras heterophyllum* or *Harpoceras falciferum*. Inside the body-chambers and in other parts of the doggers smaller specimens of *H. falciferum* are found and also *Dactylioceras gracile, D. consimile*, *Nodicoeloceras incrassatum*, *Harpoceras exiguum* and *H. falciferoides*. *H. falciferum* occurs commonly, crushed and pyritized, throughout the shales.	25 2
42.	Row of scattered oval doggers with pyritized skins and solid pyritized specimens of *Inoceramus* projecting from their top surfaces. *Harpoceras falciferum*	0 5
41.	Shale, grey, bituminous. Many crushed specimens of *Harpoceras falciferum*, *Hildaites* sp. and *Dactylioceras* sp. indet. preserved in pyrites. Thickness obtained at Port Mulgrave and Runswick.	19 3
	Jet Rock	
40.	The Millstones. Circular. lenticular doggers of grey limestone up to 15 feet diameter, set in the top of the bed below. In the shales between individual Millstones crushed *Harpoceras elegans*[2], *Hildaites* sp. and *Dactylioceras* spp. indet, occur, and these sometimes form a shell bed. Thickness at centre of Millstones	1 0
39	Top Jet Dogger. Laminated, argillaceous, grey limestone. *Harpoceras elegans*, *Dactylioceras* sp. indet.	0 9
38	Shale, grey, bituminous, with occasional calcareous doggers. The Upper Pseudovertebrae occur about 1 foot above the base, and are irregular lines of calcareous nodules with thin pyritic skins, each nodule having roughly the form of the centrum of a large plesiosaur or ichthyosaur vertebra; lines may be up to 12 feet long, tapering at each end, and occasionally a line may divide. Doggers similar in size and shape to the Curling Stones* also occur at this horizon at Hawsker Bottoms, and rarely elsewhere. *Harpoceras elegans Harpoceratoides strangewaysi* and *Phylloceras heterophyllum* occur in both shale and doggers	5 0
37	The Curling Stones. Calcareous doggers with pyritic skins, many being almost perfect oblate spheroids 15 to 18 inches diameter and 8 inches thick; boxstone jointing common. At Hawsker Bottoms the doggers are more irregular and in places form lines resembling the Upper Pseudovertebrae. *Harpoceras exaratum*, (*H. exaratum-H. elegans* transitions); *H. elegans, Nodicoeloceras crassoides Dactylioceras* sp. nov. *Dactylioceras* sp. indet. *Phylloceras heterophyllum*	1 0

The strata that make up Topman Steel are zoned using ammonites. Fossil zonation is an approach well established in geology and was pioneered in the North Yorkshire Jurassic by Louis (Lewis) 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 images that follow are an interpretation of Howarth's description using an image taken of the site in July 2014. In addition images of the ammonites that characterise the zones are provided. These are taken from monographs by Buckman, Dumortier and Wright. This brings together information from a variety of sources into a single condensed view of the geology of Topman Steel. Howarth numbered the beds in the description and those numbers are used here. The beds in which the zonal assemblages of Ammonites were found are indicated in brackets on the ammonite image annotations.

Note:'Dogger' is a term with two meanings in this context. A Dogger can be a spherical or subspherical concretion often occurring in lines on the foreshore and discrete beds in the cliff. Dogger can also be simply used as part of a name for a bed

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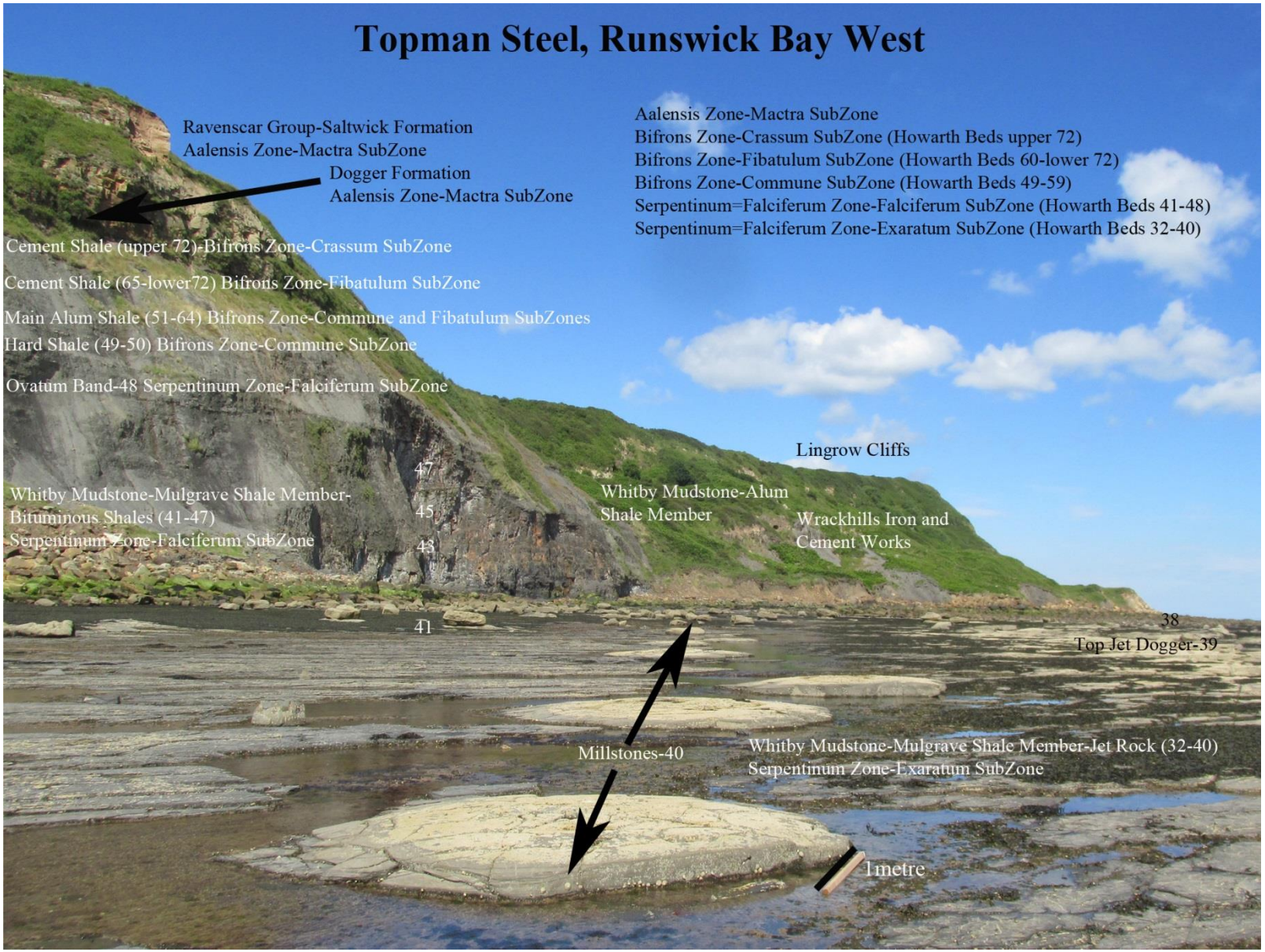

Topman Steel, Runswick Bay West
Ravenscar Group-Saltwick Formation
Aalensis Zone-Mactra SubZone
Dogger Formation
Aalensis Zone-Mactra SubZone
Aalensis Zone-Mactra SubZone
Bifrons Zone-Crassum SubZone (Howarth Beds upper 72)
Bifrons Zone-Fibatulum SubZone (Howarth Beds 60-lower 72)
Bifrons Zone-Commune SubZone (Howarth Beds 49-59)
Serpentinum=Falciferum Zone-Falciferum SubZone (Howarth Beds 41-48)
Serpentinum=Falciferum Zone-Exaratum SubZone (Howarth Beds 32-40)
Cement Shale (upper 72)-Bifrons Zone-Crassum SubZone
Cement Shale (65-lower72) Bifrons Zone-Fibatulum SubZone
Main Alum Shale (51-64) Bifrons Zone-Commune and Fibatulum SubZones
Hard Shale (49-50) Bifrons Zone-Commune SubZone
Ovatum Band-48 Serpentinum Zone-Falciferum SubZone
Lingrow Cliffs
47
Whitby Mudstone-Mulgrave Shale Member-
Bituminous Shales (41-47)
Serpentinum Zone-Falciferum SubZone
45
43
Whitby Mudstone-Alum
Shale Member
Wrackhills Iron and
Cement Works
41
38
Top Jet Dogger-39
Millstones-40
Whitby Mudstone-Mulgrave Shale Member-Jet Rock (32-40)
Serpentinum Zone-Exaratum SubZone
1metre

Characteristic Ammonites of the Zones on the Foreshore and Lower Cliff at Topman Steel, Runswick Bay West

Exaratum SubZone (Beds 32-40) Image source in []

The subzone corresponds to the combined stratigraphical ranges of Elegantuliceras and Harpoceras exaratum. In Yorkshire it consists of the Jet Rock, 25 ft. thick, and these ammonites occur in the following sequence :
2. Harpoceras exaratum and spp. (species)
1. Eleganticeras spp.

Cleviceras (Harpoceras) exaratum (35-37) [Buckman]

Harpoceras elegans (37-40) [Wright]

Eleganticeras elegantulum (32-34) [Wright]

Eleganticeras rugatulum (33-35) [Wright]

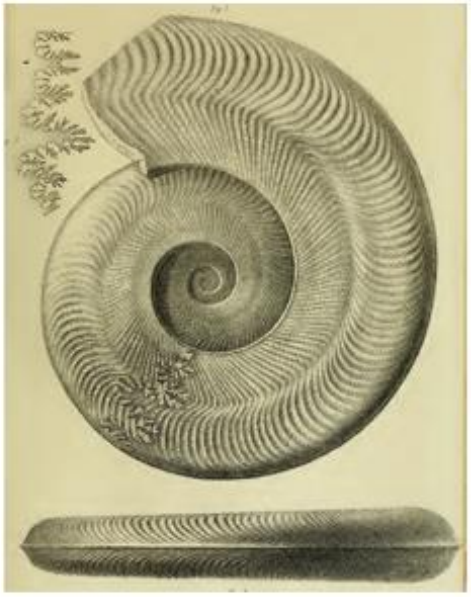
Monestieria (Pseudogrammoceras?) errata (35) [Buckman]

Lytoceras crenatum (35,37?) [Buckman[

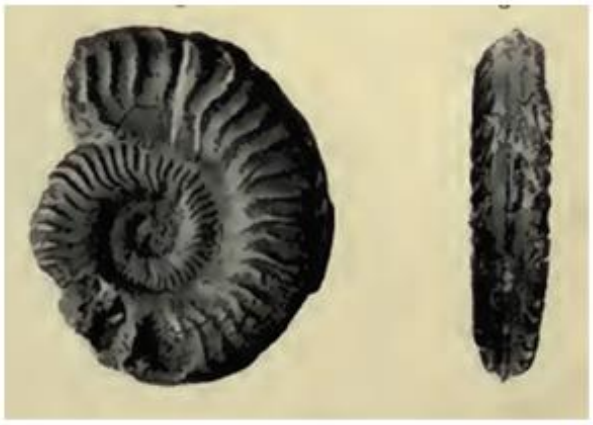
Trachylytoceras (Lytoceras) nitidum (35) [Buckman]

Exaratum SubZone (Beds 32-40)

Nodicoeloceras crassoides (37)
[Buckman]



Harpoceratoides strangewaysi (Harpoceras serpentinum) (38)
[Wright]



Hildaites levisoni (35)
[Buckman]

Dactylioceras crassiusculosum (?)
[Buckman]

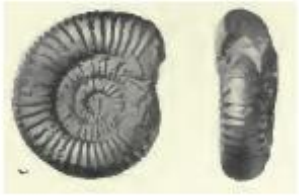
Falciferum SubZone (Beds 41-48)

Ovaticeras ovatum (48) [Buckman]

Harpoceras falciferum (41-45) [Buckman)

Harpoceras falciferoides (43) [Buckman]

Harpoceras exiguum (43) [Buckman]



Dactylioceras gracile (42,43) [Buckman]

Nodicoeloceras incrassatum (43) [Buckman]

Some Moth Trapping Records

Paul Forster

Abbrevations:recs-Records, Indvs-Individuals

Tudor Croft Guisborough, NZ602157, Vice County 62, 20-Jul-14, MV Light, Adult Stage, In Flight

Code	Taxon	Vernacular	Qty
1666	*Geometra papilionaria*	Large Emerald	1
1917	*Selenia dentaria*	Early Thorn	1
1776	*Colostygia pectinataria*	Green Carpet	2
2343 x	*Mesapamea secalis agg.*	Common Rustic agg.	3
464	*Plutella xylostella*	Diamond-back Moth	2
1724	*Xanthorhoe spadicearia*	Red Twin-spot Carpet	1
1653	*Habrosyne pyritoides*	Buff Arches	2
1236	*Pammene fasciana*		1
2077	*Nola cucullatella*	Short-cloaked Moth	1
2050	*Eilema lurideola*	Common Footman	3
	Hepialidae	ghost moths	1
873	*Blastobasis adustella*		6
2337 x	*Oligia strigilis agg.*	Marbled Minor agg.	1
1702	*Idaea biselata*	Small Fan-footed Wave	1
2477	*Hypena proboscidalis*	Snout	1
1803	*Perizoma alchemillata*	Small Rivulet	2
2381	*Hoplodrina alsines*	Uncertain	3
2107	*Noctua pronuba*	Large Yellow Underwing	4
1713	*Idaea aversata ab. remutata*	Riband Wave [non-banded form]	3
1922	*Ourapteryx sambucaria*	Swallow-tailed Moth	1
1305	*Agriphila tristella*		2
2198	*Mythimna impura*	Smoky Wainscot	1
263	*Lyonetia clerkella*	Apple Leaf Miner	1
1316	*Catoptria falsella*		1
424	*Yponomeuta evonymella*	Bird-cherry Ermine	1
1777	*Hydriomena furcata*	July Highflyer	1
2109	*Noctua comes*	Lesser Yellow Underwing	2
1338	*Dipleurina lacustrata*		1
1234	*Pammene regiana*		1
2030	*Euproctis similis*	Yellow-tail	1
2155	*Melanchra persicariae*	Dot Moth	1
2336	*Apamea ophiogramma*	Double Lobed	1
1955	*Cabera pusaria*	Common White Wave	1
1937	*Peribatodes rhomboidaria*	Willow Beauty	2
2443	*Autographa jota*	Plain Golden Y	1
2049	*Eilema depressa*	Buff Footman	2
1961	*Campaea margaritata*	Light Emerald	1
2111	*Noctua janthe*	Lesser Broad-bordered Yellow Underwing	10

2434	*Diachrysia chrysitis*	Burnished Brass	2
1884	*Abraxas grossulariata*	Magpie Moth	2
2489	*Zanclognatha tarsipennalis*	Fan-foot	2
2293	*Cryphia domestica*	Marbled Beauty	3
658	*Carcina quercana*		1
1358	*Evergestis pallidata*		1
2128	*Xestia triangulum*	Double Square-spot	4
1010	*Ditula angustiorana*	Red-barred Tortrix	1
1405	*Pleuroptya ruralis*	Mother of Pearl	1

Early and Late Dates [South Gare Blast pools][2014],NZ5626

Code	Taxon	Vernacular	Recs	Indvs	Earliest	Latest
14	*Hepialus humuli*	Ghost Moth	1	1	22-Jul	22-Jul
15	*Hepialus sylvina*	Orange Swift	1	1	22-Jul	22-Jul
937	*Agapeta hamana*		1	3	24-Jun	24-Jun
972	*Pandemis heparana*	Dark Fruit-tree Tortrix	2	4	24-Jun	22-Jul
994	*Clepsis consimilana*		1	1	22-Jul	22-Jul
1183	*Epiblema foenella*		1	1	22-Jul	22-Jul
1290	*Chilo phragmitella*		1	1	22-Jul	22-Jul
1293	*Chrysoteuchia culmella*	Garden Grass-veneer	2	11	24-Jun	22-Jul
1300	*Crambus lathoniellus*		1	1	22-Jul	22-Jul
1304	*Agriphila straminella*		1	10	22-Jul	22-Jul
1481	*Homoeosoma sinuella*		2	4	24-Jun	22-Jul
1524	*Emmelina monodactyla*		1	1	24-Jun	24-Jun
1640	*Euthrix potatoria*	Drinker	1	6	24-Jun	24-Jun
1653	*Habrosyne pyritoides*	Buff Arches	1	3	24-Jun	24-Jun
1732	*Scotopteryx chenopodiata*	Shaded Broad-bar	1	5	24-Jun	24-Jun
1738	*Epirrhoe alternata*	Common Carpet	1	1	24-Jun	24-Jun
1742	*Camptogramma bilineata*	Yellow Shell	2	21	24-Jun	22-Jul
1803	*Perizoma alchemillata*	Small Rivulet	1	1	22-Jul	22-Jul
1838	*Eupithecia icterata*	Tawny Speckled Pug	1	1	22-Jul	22-Jul
1906	*Opisthograptis luteolata*	Brimstone Moth	2	13	24-Jun	22-Jul
1917	*Selenia dentaria*	Early Thorn	1	1	22-Jul	22-Jul
1937	*Peribatodes rhomboidaria*	Willow Beauty	1	2	22-Jul	22-Jul
1981	*Laothoe populi*	Poplar Hawk-moth	1	2	22-Jul	22-Jul
2030	*Euproctis similis*	Yellow-tail	1	5	22-Jul	22-Jul
2050	*Eilema lurideola*	Common Footman	1	5	22-Jul	22-Jul
2057	*Arctia caja*	Garden Tiger	1	1	22-Jul	22-Jul
2064	*Phragmatobia fuliginosa*	Ruby Tiger	1	10	22-Jul	22-Jul
2107	*Noctua pronuba*	Large Yellow Underwing	1	2	22-Jul	22-Jul
2109	*Noctua comes*	Lesser Yellow Underwing	1	5	22-Jul	22-Jul
2111	*Noctua janthe*	Lesser Broad-bordered	1	10	22-Jul	22-Jul

		Yellow Underwing				
2112	*Noctua interjecta*	Least Yellow Underwing	1	3	22-Jul	22-Jul
2176	*Cerapteryx graminis*	Antler Moth	1	1	22-Jul	22-Jul
2192	*Mythimna conigera*	Brown-line Bright Eye	1	6	22-Jul	22-Jul
2198	*Mythimna impura*	Smoky Wainscot	1	5	22-Jul	22-Jul
2199	*Mythimna pallens*	Common Wainscot	1	1	24-Jun	24-Jun
2272	*Xanthia aurago*	Barred Sallow	1	5	24-Jun	24-Jun
2321	*Apamea monoglypha*	Dark Arches	1	2	22-Jul	22-Jul
2337	*Oligia strigilis agg.*	Marbled Minor agg.	1	2	22-Jul	22-Jul
2339	*Oligia latruncula*	Tawny Marbled Minor	1	2	24-Jun	24-Jun
2341	*Mesoligia furuncula*	Cloaked Minor	1	3	22-Jul	22-Jul
2343	*Mesapamea secalis agg.*	Common Rustic agg.	1	3	22-Jul	22-Jul
2348	*Chortodes elymi*	Lyme Grass	1	1	22-Jul	22-Jul
2368	*Celaena leucostigma*	Crescent	1	2	22-Jul	22-Jul
2373	*Archanara sparganii*	Webb's Wainscot	1	6	22-Jul	22-Jul
2377	*Arenostola phragmitidis*	Fen Wainscot	1	6	22-Jul	22-Jul
2444	*Autographa bractea*	Gold Spangle	1	1	22-Jul	22-Jul

Early and Late Dates For a Site in a Year [Newton Mulgrave Castle][2014]NZ8412

Code	Taxon	Vernacular	Recs	Indvs	Earliest	Latest
14	*Hepialus humuli*	Ghost Moth	2	2	12-Jul	20-Jul
17	*Hepialus lupulinus*	Common Swift	1	3	21-Jun	21-Jun
263	*Lyonetia clerkella*	Apple Leaf Miner	1	1	20-Jul	20-Jul
424	*Yponomeuta evonymella*	Bird-cherry Ermine	1	1	20-Jul	20-Jul
464	*Plutella xylostella*	Diamond-back Moth	1	2	20-Jul	20-Jul
648	*Endrosis sarcitrella*	White-shouldered House Moth	1	1	12-Jul	12-Jul
658	*Carcina quercana*		1	1	20-Jul	20-Jul
873	*Blastobasis adustella*		2	7	05-Jul	20-Jul
874	*Blastobasis lacticolella*		1	6	21-Jun	21-Jun
937	*Agapeta hamana*		2	2	21-Jun	12-Jul
972	*Pandemis heparana*	Dark Fruit-tree Tortrix	2	2	21-Jun	12-Jul
994	*Clepsis consimilana*		1	1	21-Jun	21-Jun
1010	*Ditula angustiorana*	Red-barred Tortrix	2	2	12-Jul	20-Jul
1082	*Hedya pruniana*	Plum Tortrix	1	1	21-Jun	21-Jun
1083	*Hedya nubiferana*	Marbled Orchard Tortrix	1	1	12-Jul	12-Jul
1113	*Eudemis profundana*		1	1	21-Jun	21-Jun
1201	*Eucosma cana*		1	1	12-Jul	12-Jul
1234	*Pammene regiana*		1	1	20-Jul	20-Jul

1236	*Pammene fasciana*		1	1	20-Jul	20-Jul
1293	*Chrysoteuchia culmella*	Garden Grass-veneer	3	23	21-Jun	12-Jul
1305	*Agriphila tristella*		2	3	05-Jul	20-Jul
1316	*Catoptria falsella*		1	1	20-Jul	20-Jul
1338	*Dipleurina lacustrata*		3	9	21-Jun	20-Jul
1358	*Evergestis pallidata*		1	1	20-Jul	20-Jul
1392	*Udea olivalis*		3	8	21-Jun	12-Jul
1405	*Pleuroptya ruralis*	Mother of Pearl	1	1	20-Jul	20-Jul
1640	*Euthrix potatoria*	Drinker	1	6	22-Jul	22-Jul
1652	*Thyatira batis*	Peach Blossom	1	1	21-Jun	21-Jun
1653	*Habrosyne pyritoides*	Buff Arches	2	6	12-Jul	20-Jul
1666	*Geometra papilionaria*	Large Emerald	1	1	20-Jul	20-Jul
1702	*Idaea biselata*	Small Fan-footed Wave	2	3	12-Jul	20-Jul
1713	*Idaea aversata ab. remutata*	Riband Wave [non-banded form]	3	6	21-Jun	20-Jul
1724	*Xanthorhoe spadicearia*	Red Twin-spot Carpet	1	1	20-Jul	20-Jul
1727	*Xanthorhoe montanata*	Silver-ground Carpet	1	6	21-Jun	21-Jun
1728	*Xanthorhoe fluctuata*	Garden Carpet	1	3	21-Jun	21-Jun
1749	*Pelurga comitata*	Dark Spinach	1	1	05-Jul	05-Jul
1757	*Eulithis mellinata*	Spinach	1	1	05-Jul	05-Jul
1762	*Chloroclysta citrata*	Dark Marbled Carpet	1	1	05-Jul	05-Jul
1776	*Colostygia pectinataria*	Green Carpet	1	2	20-Jul	20-Jul
1803	*Perizoma alchemillata*	Small Rivulet	1	2	20-Jul	20-Jul
1808	*Perizoma flavofasciata*	Sandy Carpet	1	1	12-Jul	12-Jul
1834	*Eupithecia vulgata*	Common Pug	1	1	21-Jun	21-Jun
1884	*Abraxas grossulariata*	Magpie Moth	1	1	20-Jul	20-Jul
1904	*Plagodis dolabraria*	Scorched Wing	1	1	21-Jun	21-Jun
1906	*Opisthograptis luteolata*	Brimstone Moth	2	6	21-Jun	12-Jul
1917	*Selenia dentaria*	Early Thorn	1	2	20-Jul	20-Jul
1922	*Ourapteryx sambucaria*	Swallow-tailed Moth	2	2	12-Jul	20-Jul
1937	*Peribatodes rhomboidaria*	Willow Beauty	1	2	20-Jul	20-Jul
1941	*Alcis repandata*	Mottled Beauty	2	5	05-Jul	12-Jul
1955	*Cabera pusaria*	Common White Wave	1	1	20-Jul	20-Jul
1961	*Campaea margaritata*	Light Emerald	4	10	21-Jun	20-Jul
1994	*Phalera bucephala*	Buff-tip	1	1	21-Jun	21-Jun
2006	*Pheosia gnoma*	Lesser Swallow Prominent	1	1	21-Jun	21-Jun
2030	*Euproctis similis*	Yellow-tail	1	1	20-Jul	20-Jul
2049	*Eilema depressa*	Buff Footman	1	2	20-Jul	20-Jul
2050	*Eilema lurideola*	Common Footman	3	6	21-Jun	20-Jul
2057	*Arctia caja*	Garden Tiger	1	1	05-Jul	05-Jul
2060	*Spilosoma lubricipeda*	White Ermine	1	6	21-Jun	21-

						Jun
2061	*Spilosoma luteum*	Buff Ermine	1	8	21-Jun	21-Jun
2077	*Nola cucullatella*	Short-cloaked Moth	1	1	20-Jul	20-Jul
2089	*Agrotis exclamationis*	Heart and Dart	2	16	05-Jul	12-Jul
2102	*Ochropleura plecta*	Flame Shoulder	1	4	05-Jul	05-Jul
2107	*Noctua pronuba*	Large Yellow Underwing	4	21	21-Jun	20-Jul
2109	*Noctua comes*	Lesser Yellow Underwing	1	2	20-Jul	20-Jul
2111	*Noctua janthe*	Lesser Broad-bordered Yellow Underwing	2	12	12-Jul	20-Jul
2120	*Diarsia mendica*	Ingrailed Clay	2	3	21-Jun	05-Jul
2122	*Diarsia brunnea*	Purple Clay	3	12	21-Jun	12-Jul
2128	*Xestia triangulum*	Double Square-spot	3	9	21-Jun	20-Jul
2155	*Melanchra persicariae*	Dot Moth	1	1	20-Jul	20-Jul
2158	*Lacanobia thalassina*	Pale-shouldered Brocade	1	1	21-Jun	21-Jun
2176	*Cerapteryx graminis*	Antler Moth	1	1	12-Jul	12-Jul
2193	*Mythimna ferrago*	Clay	1	2	12-Jul	12-Jul
2198	*Mythimna impura*	Smoky Wainscot	3	3	05-Jul	20-Jul
2205	*Mythimna comma*	Shoulder-striped Wainscot	1	1	21-Jun	21-Jun
2293	*Cryphia domestica*	Marbled Beauty	2	4	21-Jun	20-Jul
2303	*Thalpophila matura*	Straw Underwing	1	8	22-Jul	22-Jul
2321	*Apamea monoglypha*	Dark Arches	2	10	05-Jul	12-Jul
2330	*Apamea remissa*	Dusky Brocade	1	1	21-Jun	21-Jun
2336	*Apamea ophiogramma*	Double Lobed	1	1	20-Jul	20-Jul
2337	*Oligia strigilis agg.*	Marbled Minor agg.	2	2	05-Jul	20-Jul
2340	*Oligia fasciuncula*	Middle-barred Minor	1	1	21-Jun	21-Jun
2343	*Mesapamea secalis agg.*	Common Rustic agg.	2	5	05-Jul	20-Jul
2381	*Hoplodrina alsines*	Uncertain	3	9	05-Jul	20-Jul
2382	*Hoplodrina blanda*	Rustic	1	3	12-Jul	12-Jul
2389	*Paradrina clavipalpis*	Pale Mottled Willow	1	1	21-Jun	21-Jun
2434	*Diachrysia chrysitis*	Burnished Brass	1	2	20-Jul	20-Jul
2443	*Autographa jota*	Plain Golden Y	1	1	20-Jul	20-Jul
2477	*Hypena proboscidalis*	Snout	2	4	05-Jul	20-Jul
2489	*Zanclognatha tarsipennalis*	Fan-foot	1	2	20-Jul	20-Jul
2492	*Herminia grisealis*	Small Fan-foot	1	1	12-Jul	12-Jul

Tees Valley Wildlife Trust-Wild Green Places Project

This five year project, led by the Tees Valley Wildlife Trust, has been developed to contribute to an objective of the Tees Valley Nature Partnership to provide sustainable engagement of local people in taking an active role to improve the biodiversity and accessibility of public green spaces. The vision of the project is to contribute to the "quality of place" in the Tees Valley and develop a greater sense of pride and ownership of the local environment by communities – feeding into the aspiration of the Tees Valley being a great place in which to live and work.

The Tees Valley Wildlife Trust has been awarded a grant of £425,800 from the Heritage Lottery Fund, and an additional £80,000 is being sought. The project will start in January 2015.

The mission of the project is to:
"Increase appreciation and understanding of the natural heritage of public open spaces in the Tees Valley and increase the skills of local people to record and care for this heritage."

Members of the Field Club can contribute to and benefit from the project by participating in the activities that will be organized and promoted by the project, and by submitting any and all biological records from these sites. Please send records to santrobus@teeswildlife.org or m_birtle@hotmail.com.

Local authority area	Name of site	Grid ref.	Area (ha)	Community/ Friends of group	Main habitats
Redcar and Cleveland	Coatham Green	45945252	5.75	Coatham Heritage Group	Coastal grassland and fixed sand dune
	King George V playing Field	46075163	2.97	Friends of King George Playing field	Semi-improved grassland, scrub, secondary woodland, ruderal
	Errington Woods	46295204	79.65	Friends of Errington Woods	Ancient woodland, mainly conifer plantation
	Leyland Beck and nearby Pond	46565195	4.84	Skelton Villages Environment Improvement group	Part of East Cleveland ancient woodland complex, beckside vegetation heavily modified
Middlesbrough	Stainton Wood	44805141		Friends of Stainton and Thornton Open Spaces	Young native woodland plantation

	Linthorpe Cemetery LNR	44835188	20.77	Friends of Linthorpe Cemetery	Victorian Parkland Cemetery, with mature woodland
	Berwick Hill LNR/Ormesby Beck	45105185	28.70	Ormesby Beck Friendship group/ Boro Becks Volunteers	Reedbed, wetlands, abandoned allotments, urban grassland, scrub and new woodland mosaic
	Sudbury Pond	45265146	0.68	Friends Of Sudbury Pond	Farm pond in urban area
Stockton	Lustrum Beck Allotments	44345195	5.36	Green Group	Old allotments, wetlands
	Meadowings	44175119	3.49	Meadowings Residents Group	Possibly remnants of ancient grassland, now managed as lawns in social housing estate
	Tilery Park	44525201	23.92	St Ann's Partnership	Improved grassland, rank grassland and woodland plantations, riverside vegetation
	Roseworth Green spaces	44325213	0.68	Roseworth Partnership	Improved grassland and small beck
Hartlepool	Seaton Park	45245292	7.38 ha	Friends of Seaton Park	Traditional park
	Stranton Cemetery	45005304	18.39 ha	Friends of Stranton Cemetery	Traditional late Victorian cemetery, some mature trees
	Ward Jackson Park	44895325	6.72 ha	Friends of Ward Jackson Park	Traditional Victorian park, with lakes, secondary woodland, parkland landscape, small wetland features

	Hart to Haswell Walkway with Summerhill LNR	44755367 4483,5313	9.27 ha 41.56 ha = 50.83 ha	Friends of Hartlepool Green Spaces	Summerhilll- large area of habitat creation from arable farmland, extensive areas of new woodlands, grasslands and wetlands and ponds. Hart to Haswell- Mosaic of semi-natural vegetation, mainly grassland and scrub and small ponds
Darlington	Rockwell LNR	42995160	23.72	Friends of Rockwell	Linear Riverside habitat, secondary woodland, semi-improved grassland and ponds

Field Meetings 2015

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 are best organised at short notice because they are highly dependent on suitable weather conditions. These include moth trapping with Paul Forster and a number of recording meetings at different times of the year at both the North and South Gares. If you are interested in events such as these, please let Eric Gendle or Neil Baker have your contact details (an email address if possible) and we will ensure you are kept informed about them as and when they are arranged.

Saturday, 18th April, 10:30 am, leader Colin Chatto ☎ 01642 599616
GR NZ668216. **Saltburn Woods and Gill**. Meet at Cat Nab car park. A fairly easy walk of about 4 miles on the eve of Primrose Day.

Wednesday, 22nd April, 11:00 am, leader Malcolm Birtle ☎ 01642 649938
GR NZ453228. **Billingham and Lustrum Becks**. Meet in the Ecology Park car park. A 3 mile stroll around and between the two becks.

Wednesday, 29th April, 10:30 am, leader Daphne Aplin ☎ 01642 884719
GR NZ483363. **Hart to Haswell Walkway**. Meet at the Walkway entrance. There is roadside parking on the nearby Ocean Road. Please park with consideration for local residents. A pleasant and easy walk, mostly on the level.

Wednesday, 6th May, 10:30 am, leader Eric Gendle ☎ 01642 281235

GR SE985875. **Raincliffe Woods, near Scarborough**. Meet at the grid reference. A circular walk in Raincliffe Woods as far as Throxenby Mere for lunch, returning by a different path. The walk is about 5 miles with some gentle ascents and descents involved.

Saturday, 9th May, 10:30 am, leader Colin Chatto ☎ 01642 599616
GR NZ495175. **Marton West Beck Trail**. Meet on Glendale Road (off Emerson Avenue) for a walk of about 7 miles in total along the Nature Trail established in 1981, our Centenary Year, by the Cleveland Naturalists in conjunction with Middlesbrough Parks Department.

Wednesday, 13th May, 10:30 am, leader Vincent Jones
☎ 01325 361547 (Neil Baker)
GR SE614836. **Helmsley area**. Meet by the stone bridge over the river Rye at the south end of Helmsley. There should be ample parking in the vicinity. A gentle walk of about 4 miles. Care needs to be taken on parts of the path in East Plock Wood.

Wednesday, 20th May, 10:30 am, leader Mark Stokeld ☎ 01642 783819
GR NZ505232. **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. A leisurely day exploring this site to see the usual good mix of birds and also to look at some of the interesting botany there.

Wednesday, 27th May, 10:30 am, leader David Barlow ☎ 01642 562625
GR NZ428385. **Castle Eden Dene**. Meet outside the church at Castle Eden. There is plenty of parking on the road.

Wednesday, 3rd June, 10:30 am, leader Vic Fairbrother ☎ 01287 633744
GR SE679996. **Rosedale**. Meet at the Lion Inn on Blakey Ridge for a circular walk of about 4.5 miles around the head of the dale. There will be a little climbing at a gentle pace.

Sunday, 7th June, 10:30 am, leader Eric Gendle ☎ 01642 281235
GR SE328638. **Burton Leonard**. Meet in Burton Leonard. A circular walk calling in at Burton Leonard Limekilns YWT Nature Reserve (limestone grassland and crags) and using the Ripon Rowel Walk. The walk is about 5 miles with very little climbing.

Wednesday, 10th June, 1:30 pm, leader Daphne Aplin ☎ 01642 884719
GR NZ479254. **Cowpen Bewley Woodland Park**. Meet in the visitor centre car park. A site that we have enjoyed several times in the past few years, Cowpen Bewley Woodland Park has an abundance of habitats and wildlife. An easy walk, mostly on the flat, on well maintained paths.

Saturday, 13th June, 10:00 am, contact Mick Carroll ☎ 01751 476550
GR unknown. **Upper River Rye at Hawnby**. 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 or see the YNU website events page.

Wednesday, 17th June, 10:30 am, leader Mark Stokeld ☎ 01642 783819
GR NY907283. **Teesdale.** Meet in the Bowlees car park. A leisurely walk with a little climbing.

Sunday, 21st June, 1:30 pm, leader Maggie and Graeme Boyd ☎ 01287 634707
GR NZ511349. **Spion Kop Cemetery**. Meet at Spion Kop Cemetery, which is a small urban fringe nature reserve. Access is off Old Cemetery Road in Hartlepool. The reserve is species rich dune grassland which is home to many rare plants.

Wednesday, 1st July, 6:30 pm, leader Eric Gendle ☎ 01642 281235
GR NZ526087. **Stokesley.** Meet in College Square car park on the High Street. An easy circular walk around the Leven Diversion Channel, which is reported as having interesting flora.

Saturday, 4th July, 10:30 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.

Wednesday, 8th July, 6:30 pm, leader Ian Lawrence ☎ 01642 828858
GR NZ613249. **Redcar Stray**. Meet on Redcar Stray opposite Zetland Park close to the roundabout. An easy walk along Redcar Stray to examine the flora.

Wednesday, 15th July, 10:30 am, 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 full day walk exploring further around and beyond this TVWT nature reserve.

Saturday, 18th July, 11:00 am, leader Darlington Nats ☎ 01325 361547 (Neil Baker)
GR NZ508250. **Teesmouth**. Meet in the Teesmouth NNR car park off the A178 just south of Greatham Creek. This is a joint meeting with the Darlington Nats. We will explore the saltmarsh area and possibly move on to also look at the meadows behind the sand dunes near the power station.

Wednesday, 22nd July, 6:30 pm, leader Vic Fairbrother ☎ 01287 633744
GR NZ593110. **Gribdale Gate**. Meet in the Gribdale Gate car park for a 3 mile circular walk on Great Ayton Moor. There will be a little climbing at a gentle pace.

Sunday, 26th July, 10:30 am, leader Bill Hall ☎ 01642 823170 or 07753 663589
GR SE583752. **Gilling Lakes, Ampleforth**. Meet just off the Ampleforth to Yearsley road on the forest drive near Windy Gates. A walk through Yearsley Woods to Gilling Lakes . This joint meeting with the YDG has a focus on dragonflies and damselflies.

Wednesday, 29th July, 10:30 am, leader Andy Astbury ☎ 01642 823114
GR NZ717083. **Esk Dale and Little Fryup Dale**. Meet in the pay and display car park at the Moors National Park Centre at Danby Lodge. An easy to moderate walk of about 7 miles with some climbing which we will take steadily.

Wednesday, 5th August, 1:30 pm, leader Tony Wardhaugh ☎ 01642 322935
GR NZ722182. **Rosecroft Wood, Loftus**. Park in Loftus and meet in the main street near the Golden Lion. An easy walk.

Sunday, 9th August, 10:30 am, leader Jo Scott ☎ 01642 897843
GR SE516831. **Garbutt Wood and Gormire Lake**. Meet in the picnic area at the top of Sutton Bank. A moderate walk with some climbing, which will be taken very gently, around the Sutton Bank Nature Trail. We will walk through Garbutt Wood and visit Gormire Lake, the only natural lake in the NYM National Park.

Wednesday, 12th August, 6:30 pm, leader Andrew Ferguson ☎ 01642 311831
GR NZ447154. **Bassleton Woods and the Holmes**. Meet at the end of Bassleton Lane in Thornaby, where the footpath that leads down to Bassleton Woods starts. An easy walk.

Wednesday, 19th August, 10:30 am, leader Neil Baker ☎ 01325 361547
GR NZ398152. **Coatham Stob**. Meet in the car park off the road between Longnewton and Urlay Nook. A continued exploration of this site which had to be curtailed last summer owing to poor weather. Coatham Stob is good for birds, butterflies and dragonflies. We will look at the new series of ponds to see how they are developing.

Saturday, 5th September, 10:30 am, leader Andy Astbury ☎ 01642 823114
GR SE548858. **Old Byland, Nettle Dale and Rievaulx Abbey**. Meet at Old Byland, where there is limited parking by the fringes of the green. An easy to moderate walk of about 7 miles with some climbing which we will take steadily.

Wednesday, 9th September, 11:00 am, leader Malcolm Birtle ☎ 01642 649938
GR NZ266243. **Aycliffe to Shildon**. Meet in Aycliffe Station car park. A walk from Aycliffe to Shildon to examine brownfield habitat adjacent to the railway, Middridge Quarry, and possibly extending to Brussleton Incline, depending on time and weather. Bring some money (less than £5) for the return train journey to avoid the walk. Easy flat walking on hard surfaces.

Wednesday, 16th September, 10:30 am, leader Alan Simkins ☎ 01642 477484
GR NZ900112. **Whitby to Saltwick Bay**. Meet at the bottom of the Abbey Steps. This is a joint meeting with the Tees Valley RIGS Group. We will walk out along the base of the cliffs (low water is at 12:32) to study the geology and return along the cliff top. The total walking distance is approximately 3 miles with some climbing.

Wednesday, 23rd September, 2:00 pm, leader Malcolm Birtle ☎ 01642 649938
GR NZ382106. **Newsham Village**. Meet in the car park in the lane beyond the duck pond. The lane runs from the Aislaby to Middleton-One-Row road. If travelling from Aislaby to Middleton turn left from this road across a cattle grid at GR NZ383114. It is a moderate climb from the river to the car park and probably a very muddy walk of about 1 mile over broken ground.

Saturday, 26th September, 11:00 am, leader Tom Kirby ☎ 01740 630179
GR NZ584153. **Pinchinthorpe Woods**. Meet at the visitor centre car park. This is a joint fungus foray with the NEFSG.

Saturday, 17th October, 11:00 am, leader Malcolm Birtle ☎ 01642 649938
GR NZ618201. **Errington Woods and Tocketts**. Meet in the car park at Errington Woods. A medium length walk of about 4 miles through the wood to Upleatham and into Tocketts.

Sunday, 8th November, 11:00 am, leader Alan Simkins ☎ 01642 477484
GR SE469993. **Cod Beck Reservoir**. Meet at the roadside car parks. This is a joint fungus foray with the NEFSG.

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.davebarlow.co.uk
http://www.ynu.org.uk
http://www.nhsn.ncl.ac.uk/
http://www.dtnfc.org/

Dates for Winter Meeting 2015-2016

Sep 28. Oct 19, 26. Nov 16. Dec 21. Jan 25. Feb 15, 29. Mar 21, 28.