# CLEVELAND NATURALISTS'

# FIELD CLUB

# RECORD OF PROCEEDINGS

**Volume 5 Part 3** **Spring 1993**

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## Membership Details

Any person interested in joining the Cleveland Naturalists Field Club should send their subscription to the Membership Secretary.
Potential members are welcome to our field meetings listed at the back of this issue.
Annual subscriptions are due on 1st January each year.
(Adult £5.00. Students under 18 years £1.00)
Members are entitled to attend meetings of:
Yorkshire Naturalists' Union,
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The following members will be pleased to assist in the identification of specimens.

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The proceedings are compiled and produced by M.Birtle, I.Lawrence, D. Fryer P Wood, M.Hallam, J.Blackburn, V. Jones, and A. Weir. Drawings were produced by E. Gendle, and M.Birtle. Map was produced by D. Fryer.

# Editorial

This is the third issue of the new Cleveland Naturalists Field Club Proceedings. We would like to thank Professor Mark Seaward (Bradford University) for allowing us to reproduce his paper on William Mudd, which was delivered to the Club on February 1st, 1993. This is a most interesting and informative contribution to our current issue. It was announced in the first issue that a field study group within the Club was to begin collecting and collating records made by members of the Field Club on a more formal basis than previously. It was hoped that these records would then be issued through the Proceedings in order to make the information more widely available. This work has continued and some results were provided in the first two Parts of the new Proceedings. This issue is the result of further work in 1992. The group responsible for this work decided that the second issue, which was site based i.e. Eston Moor, was the format we would try to follow for this issue and South Gare was therefore chosen as the focus of interest. It should be pointed out that these reports are not intended as full, complete, detailed surveys. Rather they are intended as reports of work in progress, and consequently this issue includes updates to both Eston Moor and Guisborough Walkway reports which can be found in Part 2 (1992). We hope that these reports will stimulate further work on the sites by Field Club Members and Members are encouraged to report any further records for these sites for future updates.

All Members of the Field Club are encouraged to contribute notable records for inclusion in the Proceedings; particularly from field meetings. There is also always some space available for small pieces of artwork. These reproduce best if in the form of black and white drawings. Many thanks to all the contributors to the current issue.

M.Birtle

## Highlights of the 1992 Field Meetings

**Sunday 22nd March, Greatham Salt Marsh**

In fairly damp weather a party of 12 members walked from Greatham Village to the saltmarsh on Greatham Creek adjacent to the railway line. A dead heron was found under some power lines. In addition Curlew, Shelduck, Wigeon, and a Kestrel were noted. Few plants were in flower but the following were noted- White and red Dead Nettle *(Lamium album, L. purpurea),* Speedwells *(Veronica hederifolia, V.persica, V. agrestis)* and Small Nettle *(Urtica urens).*

**Saturday 11th April, Dunsdale and Wilton Woods**

This was a very pleasant walk led by Mrs. Pat Wood in warm Spring sunshine and was attended by nineteen members. On entering Dunsdale woods from the village Blackcap, Chiff-chaff and Garden Warbler were very evident with their songs, competing with Song Thrush and Robin. Along the way several Oak, Ash, and Beech trees were observed in varying stages of decay from disease and bark beetles. They were all well riddled with holes produced by Great Spotted and Green Woodpeckers, both of which were seen and heard. A detour was made to visit one of the many ponds to the West of the wood. Here we saw many common toads, a pair of Tufted Duck, and a singing male Reed Bunting. On the journey through Wilton Wood and return, many of the common woodland plants were seen including Wood Anemone *(Anemone nemorosa)* and more notable Giant Hogweed *(Heracleum mantegazzianum).* Three Nerved Sandwort *(Moelringia trinervia)* and Lesser Periwinkle *(Vinca minor).* Altogether twentyfour species of birds were noted including Heron, Canada Geese, Coal-Tit, Curlew and Tree Creeper. Two insects seen were Small Tortoiseshell and the Hawthorn Shield Bug (*Acanthosoma haemorrhiodalis).*

**Saturday 25th April, Huntcliffe Shoreline**

The party left the Ship Inn and walked along the undercliff to Skinningrove. The usual seabirds were noted e.g. Fulmar, Kittiwake and gulls, with a number of common waders. Geological features in the cliff were noted, together with the fossil material, and explanations on their origin were provided by M. Birtle.

**Sunday 10th May, Cow Close Wood**

This outing was led by Graeme Aldous, the warden of this Woodland Trust reserve. Notable plants observed were Wood Forget-me-not *(Myosotis sylvatica)* Early Purple Orchid *(Orchis mascula).* Wood Vetch *(Vicia sylvatica)* Hairy Woodrush *(Luzula pilosa),* and Meadow Saxifrage *(Saxifraga granulata).* Wood Horsetail *(Equisetum sylvaticum)* was plentiful in the wet grassland immediately outside the wood. Two moths were noted Least Black Arches *(Nola confusalis)* and Grey Birch *(Aethalura punctulata).*

**Wednesday 13th May, Forty pence Wood near Skelton**

This walk, the first evening walk of the season, was arranged by Mike Yates with the Skelton and Gilling Estate. This provided an opportunity to

record and observe species in an area that is not open to the public. The walk was well attended. Bird species observed were: Blackcap, Blackbird, Goldcrest, Great Tit, Pheasant, Partridge, Jackdaw, Kestrel, Linnet, Yellow Hammer, Robin, Song Thrush, Swallow, Whitethroat, Wood Pigeon and Wren. A typical, abundant woodland flora was evident. Amongst the less frequent species were Bog Stitchwort *(Stellaria uliginosa)* Hairy Woodrush *(Luzula pilosa),* Marsh Ragwort *(Senecio aquaticus).* Parsley Piert *(Aphanes arvensis)* and a less usual cut-leaved form of Herb Robert *(Geranium robertianum vars laciniata),*

**Saturday 16th May, Castle Eden Dene**

Eleven club members were led by Maurice Hallam on this excursion. The weather was bright and sunny as we started from the church and walked northwards to the castle as we entered the Dene. The party walked westwards descending and crossing the Dene. After investigating the westerly end of the Dene the party returned Eastwards alongside the burn, turning south to return to the Church. 124 botanical species were recorded including Common Twayblade *(Listera ovata)* Leopards Bane *(Doronicum pardalianches).* Herb Paris *(Paris quadrifolia)* Wood Cranesbill *(Geranium silvaticum),* Thimbleberry *(Rubus parviflorus),* Bird Cherry *(Prunus padus).* Giant Butterbur *(Petasites japomcus),* Fringe Cups *(Tellima grandiflora),* Lily-of-the-Valley *(Convallaria majalis).* Spindle *(Euonymus europaeus).* Giant Knotweed *(Fallopia sachalinensis).* 22 bird species were noted including Great Spotted Woodpecker, Nuthatch, Tree creeper, and Goldcrest. Orange Tip (*Anthocharis cardamines*) butterflies were in evidence and one red squirrel.

**Wednesday 10th June, Burn Wood nr. Long Newton**

The party walked the length of the wood from the Long Newton-Urlay Nook road westwards. At the west end of the wood the party split into two- 1 group returning through the thickly wooded side of the stream to the road, the other via Long Newton. No significant botanical finds were made but the following moths were noted. Blood vein *(Timamdra griseata*), Twin Spot Carpet (*Perizoma didymata didymata*), Silver Ground Carpet (*Xanthorhoe montanata montanata*), Snout (*Hypena proboscidalis*), Nettletap, Inlaid Grass Veneer (*Crambus pascuella*), Chimney Sweep (*Odezia atrata*), Angle Shades (*Phlogophora meticulosa*), Gold Swift (*Hepialus hecta*), Yellow Shell *(Camptogramma bilineata bilineata*) Hook Marked Conch *(Agapeta hamana),* and Conway's Shade *(Pseudoorgyrotoza conwayaria).* Also noted were Rhinocerous Beetle, and Great Spotted Woodpecker.

**Sunday 14th June, Broadway Foot Farm**

Nine members were led by lan Lawrence on this walk mainly to investigate a small area where the rivers Seph and Rye meet. The terrain could be described as rough pasture land sloping down to the tree-lined rivers, wooded on the Southern edge with a small man-made lake with dried up marshy areas. Fifteen bird species were noted including Sand-Martin. The following notable plants were recorded- Wood Club Rush *(Scirpus sylvaticus).* Pale Sedge *(Carex pallescens),* Bristle Club Rush *(Isolepis setacea).* Marsh Hawksbeard *(Crepis paludosa)* Changing forget-me-not *(Myosotis discolor).*

Heath Spotted Orchid *(Dactylorhiza maculata).* Wood Horsetail *(Equisetum sylvaticum).* Around the lake, which contained Rainbow Trout(*Salmo irideaus),* were many Damselflies. Three species were identified- Large Red *(Pyrrhosoma nymphula).* Blue- tailed *(Ischnura elegans),* and the Common Blue *(Enallagma cyathigerum).* Other insects noted were the Lace-wing Fly *(Chrysoperla cornea).* Silver Ground Carpet *(Xanthorhoe montanata).* Common White Wave *(Caberapusaria),* Red Admiral *(Vanessa atalanta)* Peacock *(Inachis io)* Large Skipper *(Ochlodes venatus)* Orange tip *(Anthocarus cardamines).* Common Frog and Smooth Newt were also noted.

**Wednesday 17th June, Billingham Beck**

This meeting took place on a warm evening with about 15 members present. The party examined the meadow immediately North of the Railway. The following moths were noted- White Backed Marble (*Hedya salicella*), Garden Grass Veneer (*Chrysoteuchia culmella*), Silver Ground Carpet (*Xanthorhoe montanata montanata*), Latticed Heath *(Semiothisa clathrata clathrata*), Chimney Sweep (*Odezia atrata*), Blood Vein *(Timandra griseata*) The following plants were recorded- Meadow Barley (*Hordeum secalinum*), Upright Hedge Parsley (*Torilis japonica*), Square Stalked St.John's Wort *(Hypericum tetrapterum*), False Oat Grass (*Arrhenatherum elatius*), Cocksfoot *(Dactylis glomerata*), Red Fescue (*Festuca rubra*), Rye Grass (*Lolium perenne*), Yellow Oat Grass (*Trisetum flavescens*), Pond Sedge (*Carex acutiformis*), Brown Sedge (*Carex disticha*), Hairy Sedge (*Carex hirta*), Yellow Sedge (*Carex flava*), Compact Rush

**Wednesday 1st July, Aislaby Riverside**

On a cold, damp evening a party of about 10 people walked from Aislaby village upstream along the river. The following moths and butterfly were recorded- Garden Grass Veneer *(Chrysoteuchia culmella*), 5-Spot Bumets (just emerging). Meadow Brown *(Maniola jurtina*), and Chimnev Sweep *(Odezia atrata*)

**Sunday 5th July, Boulby**

A party of 9 members set out from Boulby village and walked into the old Alum quarries, climbing out on to the cliff tops then across the fields to the Skinningrove- Boulby road. White Ramping Fumitory *(Fumaria capreolata)* was noted in the lane from the village to the Loftus Road. A Yellowshell *(Camptogramma bilineata bilineata)* was noted in the lane. The following moths were recorded in the quarry Small Ermine (*Nepticulidae sp*.), Latticed Heath *(Semiothisa clathrata clathrata*), and Drinker (*Philudoria potatoria*). Scaly Male Fern *(Dryopteris affinis)* was also seen in the quarry. Most notably Corn Buntings were seen and heard calling in fields on top of the cliff. On the Boulby-Skinningrove Road Twin Spot Carpet *(Perizoma didymata didymata*) and Five Spot Bumet were recorded.

*Note- Corn Buntings are featured in the current RSPB magazine Birds'. This article contains the following '...[Corn Buntings] are undergoing one of the most catastrophic decline in numbers and distribution ever recorded for a British bird'. There has been a 40% contraction in distribution in

20 years with numbers falling by two thirds. In Wales Corn Buntings are known from only one site. C.E.Milbum records, in the Cleveland Naturalists Proceedings for 1930-31, that '...a gradual diminution in its [Corn Bunting] numbers has taken place during the last few years, especially on the outskirts of Middlesbrough and the Haverton Hill District. The same applies to the Marske area, a former stronghold of this bird, where the sea-banks always held a few accessible pairs '

The British Trust for Ornithology is organising the Corn Bunting Survey. Anyone interested should contact BTO, The Nunnery, Nunnery Place, Thetford, Norfolk IP2-

**Wednesday 8th July, Billingham Beck Ecology Park**

This was a very wet evening and 7 members turned out in dreadful weather. Nevertheless the following moths and butterflies were seen- Meadow Brown (*Maniola jurtina*), Shaded Broad Bar (*Scotopteryx chenopodiata*), Lime Speck Pug (*Eupithecia centaureata)* , and the Large Skipper (*Ochlodes venatus*)

**Wednesday 22nd July, Swainby**

This walk, led by Maurice Ward, on a very pleasant afternoon, was along field and forest footpaths in the Swainby area. Maurice identified the various birds and bird song and much interest was shown in the summer flowers. Some time was spent looking at differences and similarities in plant form between Angelica *(Angelica sylvestris)* and Hogweed *(Heracleum spondylium).* The various horsetails that were seen en route were also looked at with interest.

**Sunday 9th August, Rosecroft and Loftus Woods**

The woods were damp and misty when a small group of members visited them for an afternoon walk. Plants of interest that were observed included Aspen, *(Populus tremula).* Giant Bellflower *(Campanula latifolia).* Broad Leaved Helleborine, *(Epipactis heleborine).* Hornbeam *(Carpinus betulus)* Wood Barley, *(Hordelymus europeaus)* and Wood Vetch *(Vicia sylvatica).* Birds observed were: Blackbird, Blackcap, Blue Tit, Dunnock, Goldfinch, Greenfinch, Grey Wagtail, House Sparrow, Robin, Swallow, Willow Warbler and Wren. A perfectly formed, newly emerged Red Admiral *(Vanessa atalanta)* butterfly attracted our interest. The sun broke through as the walk concluded.

**Sunday 27th September, Lazenby Bank**

Members were joined by the Catherine Muriel Rob Society from Thirsk, for a fungus foray led by Alex Weir. Larger mushrooms and toadstools were found in abundance following the wet period in early September. A total list of 70+ species were found including Amanita muscaria, Russula claraflava, Lactarius turpis, and other common species.

## William Mudd, The Celebrated Cleveland Lichenologist

William Mudd was undoubtedly Yorkshire's most gifted 19th century lichenologist. Mudd remains a shadowy figure: of his early life we know nothing other than that he was born in Bedale, Yorkshire in 1829 [misdated 1830 elsewhere ]. In the 1871 Census for Cambridge, Mudd gives his birthplace as Clifton Lodge; this probably refers to a dwelling on or near the Clifton Castle Estate, 2 miles SW of Thornton Watless in Bedale. He was christened at Thornton Watless on the 26th April 1829, being the third of eight children born to Christopher Mudd and his wife, Mary, (nee Purvis) whom he had married on 21 July 1824 at Thornton Watless. William Mudd married Jane Preston, probably born in 1829, since she is recorded as 42 years of age in the 1871 Cambridge Census; they married early in life but the date is unknown; the marriage probably took place in Durham City. Their first child Christopher, was born on 20th March 1852 at Great Ayton; three other boys. Mercer, Joseph, and William, were also born there in 1854, 1857 and 1860 (?) respectively.

Mudd's first appointment was to the garden of Joseph Pease at Southend, Darlington, where he was trained by Mr. Pope. His next post was at Great Ayton, where he was in charge of T.Richardson's garden, residing in Cleveland Lodge, an address which was to become well known throughout the lichenological world, for he corresponded with many of the leading experts in his day.

At Great Ayton, he came under the influence of a most remarkable schoolmaster, George Dixon (1812-1904), superintendent of the North of England Agricultural School (later Great Ayton School), where Mudd probably assisted in practical horticultural instruction. Dixon promoted the study of natural history at this and other Quaker schools, paying particular attention to the importance of botany: detailed instruction in plant taxonomy involved pupils in assembling personal pressed-plant collections of 200-300 specimens, each classified according to a Handbook prepared by Dixon. The specially- prepared herbarium labels for this work were adopted by Mudd for his lichen collections. Dixon also established 'The Cleveland Natural History Supply Depot' at Great Ayton, from which books and apparatus, much of it his own invention (eg Dixon's patent plant press), were supplied to 'working men, young students, natural history classes, and home students for the successful study of botany, entomology, and conchology at the least possible cost'.

Dixon was instrumental in encouraging Mudd to join a newly-formed Botanical Class in Great Ayton, and can almost certainly be credited with broadening Mudd's botanical horizons, probably instructing him in microscopy, and thereby arousing his interest in lichens. In only a very few years, Mudd had become an acknowledged expert, corresponding with many of the leading lichenologists at home and abroad; his first published paper in 1854 is an account of the remarkable lichens of the Cleveland area, which would clearly have been an inspiration for any student of lichenology. Although a few of the

localities, eg Oggeray Gill, cannot be identified today, it is clear that many of the lichens found by Mudd, such as *Lobaria* and *Nephroma,* have long since disappeared from the area.

After less than ten years of study, Mudd had acquired sufficient expertise in his chosen hobby to write a *Manual* published in 1861; in this, the first reasonably comprehensive and practical British lichen flora, Mudd followed the example of European lichenologists in recognising the value of microscopic examination of spores for lichen classification and identification. He also prepared an exsiccata to accompany his *Manual,* entitled *Lichenum britannicorum,* it consisted of three fascicles containing 301 specimens in total. The number of complete sets produced is unknown, but entire or part collections are to be found in herbaria worldwide. Much of the information used in the compilation of the *Manual* and many of the specimens in the exsiccata resulted from his observations and collections of Cleveland lichens. The distinctive specimen packets bearing his or Dixon's name as the collector are to be found in herbaria all over the world; major collections of Mudd material are now housed in The Natural History Museum, London, and the Falconer Museum at Forres, Scotland.

As a result of Mudd's labours, the number of lichen species known from Yorkshire rose from about 300 in 1850 to more than 480 by 1862.

Mudd's boundless enthusiasm for lichenology at this time is illustrated by W.H. Smith in his *Walks in Weardale,* dated 1885, in which he gives an account of a botanical excursion to Teesdale:

... all day long [Mudd] was busy chipping off fragments of lichen-covered rock, which were duly deposited in bags slung round his person; when the other gentlemen [J.G.Barker, W.Foggitt, J.Watson] retired for the night, they left Mr. Mudd still chipping and dressing his specimens, and in the morning as soon as they awoke, they heard the chip of Mr. Mudd's hammer already at work. After breakfast, they walked over Swinhope Fell and caught the morning coach at Westgate for Frosterley, which was then the terminus of the line; on arriving at the station, Mr. Mudd's bags were overhauled by one of the porters, who said that Mr. Mudd would have to pay for 'excess luggage'; the party protested against this, and said it was impossible that the bags could be heavy, as Mr. Mudd had carried them from the High Force over Swinhope to Westgate; however the load was placed on the scales, and it weighed over 8 stones.

It would appear that Mr. Mudd had carried this load over uneven and rugged moorland roads, with a rise and fall of approximately 1800 feet, over a distance of ten or more miles!

In 1864, Mudd's reputation was such that he was appointed as the Curator of Cambridge University Botanic Garden. Unfortunately, this did not prove an entirely happy move, and apart from issuing an exsiccata of *British Cladoniae* in 1865, his lichenological activities came to an end soon after his arrival at Cambridge.

The published Correspondence (1897) of C.C. Babington, the Professor of Botany at Cambridge, records that he took his "first walk into the country with Mr. Mudd" on 13th April 1865, and "went with ten of my class, E. Thompson of Christ's, and Mr. Mudd, the curator, to Hunstanton..." on 5th June 1865. Furthermore, Babington, in a letter dated 20th June 1865 to Professor J.H. Balfour, the King's Botanist at Edinburgh, stated that Mudd "is

quite transforming our garden. It is so much better already as to be hardly like the same place". There is strong reason to believe from an item in *The Cambridgeshire Chronicle* dated 22nd October 1864, that Mudd was taking an active part in the local Horticultural Society, as he had done earlier in Great Ayton. It would appear therefore that he was highly active in many aspects of botany in his early years at Cambridge. Babington in his correspondence mentioned that he went to Wicken Fen with Mudd on 9th July 1868, but there is little other recorded evidence of his activities at this time.

Mudd was elected an Associate of the Botanical Society of Edinburgh in 1877, but in common with most of the other Yorkshire members of the Thirsk Botanical Exchange Club, he did not make the transition to the Thirsks BEC's successor, the London BEC in 1866. This was surprising, since Mudd was one of the earliest recruits to the Thirsk BEC, being elected on the 12th May 1858. It would appear that he had not been a member of the Botanical Society of London before its collapse in 1856, although he had come under the influence ofJ.G.Baker; one of their joint collections, a specimen of *Campanula rapunculus* now in the Kew herbarium, is dated July 1853. In 1868 he was elected an Associate Fellow of the Linnean Society; the eight signatories proposing him for this honour included not only Babington but also such famous botanists as J.D.Hooker, MJ.Berkeley, W. Carruthers, and W.W. Newbould.

For much of his later life at Cambridge we know so little. From the Cambridge Poll Books we know he voted Conservative and that in 1868 he was resident at 35 Panton Street; he probably lived there from 1865 to 1871. According to the Cambridge Poll Books of 1874 and 1878, Mudd was residing at 4 College Terrace; he most probably lived there form 1871 until his death on 19th April 1879; he died after a short illness, aged 49 [or 50].

According to Max Walters, until recently the Director of the Cambridge Botanic Garden, his 'early promise seemed to come to nothing in Cambridge. The difficulty may have been partly by his state of health, which had apparently been seriously affected by his overwork at microscopy of lichens before he took the Cambridge post; it seems likely, however, that he found the atmosphere of the University and his social position in town and University so alien to his experience that he could make little of it...' The Victorian explorer Alfred Maudslay records how in 1868 he went to Cambridge to take the Natural Science Tripos, where he was coached in Botany by Mudd, 'an illiterate Scotchman [sic] who smoked very strong tobacco and smelt strongly of whisky'.

Apparently Mudd thought little of Darwinism, and gave it as his opinion that 'that man Darwin will go to Hell'. According to an obituary in *The Cambridgeshire Chronicle* dated 26th April 1879, Mudd 'added to his income by instructing pupils studying for the Natural Science Tripos and the special examination in Botany, and was a great favourite of the younger members of the University'. Mudd's income at this time was £100 p. a. After Mudd's death it was understood that the curator should not do private coaching, since, according to the *Cambridge University Reporter* date 2nd June 1879, "The [Botanical Garden] Syndicate, after careful consideration, have come to the conclusion that the Curator ought to devote his whole time and attention to the garden, and that it is not desirable that he should take private pupils. They are further of the opinion that he would be able to perform his duties with greater

efficiency if he resided in the precincts of the garden". The salary of the post was therefore raised to £150 p.a., with an allowance of £25 for a house, on the understanding that the appointee should not be permitted to take private pupils. The *Cambridge University Reporter* issued the following day went a stage further in recognising that "... a house in the garden would not only be economical, but would make a difference to the University in getting a really good curator by giving a different idea of the whole duties of the office", and furthermore, that "If Mr. Mudd had lived longer the proposal to build a house might have been delayed, but the crisis had now come and should not be neglected".

According to the Rev. W. Johnson, the author of the *North of England Lichen- Herbarium,* when about forty years of age, Mudd was " a tall man well-built and bony, but thin: his complexion was dark, his hair long and black... He was of a nervous, active temperament, with strong religious susceptibilities, and, as all such natures are, subject to melancholy and depression. "J.G. Baker, Mudd's obituarist in the *Gardeners' Chronicle* (3rd May 1879) wrote 'If any one will look through this *(Manual of British Lichens},* remembering that it is the production of a man who had to educate himself after reaching mature life, and who at the time that he was engaged upon it was working hard with his hands for twelve hours a day, and keeping a wife and family upon a wage of something like 25s a week, he will see that the book is really a wonderful monument of energy and perseverance.... He worked most diligently for many years when placed in circumstances where he had very few advantages and his friends hoped for great things when he transferred to a more favourable position [Cambridge]- a hope that now can never be realised'.

**Acknowledgements**

This paper is based on the author's more detailed biographical study of William Mudd, for which many people at home and abroad have kindly supplied information, particularly Mrs Helen Law, the great great grand-daughter of William Mudd (Noble Park, Australia), Ms Margaret Anderson (Great Ayton), Dr. David Allen (Winchester), Professor Teuvo Ahti (Helsinki), Dr. David Briggs (Cambridge), Mr. Kenneth Ross (Forres), and Dr. Max Walters (Cambridge).

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## Eston Moor

The distribution of vascular plants on Eston Moor has been further looked at throughout 1992. It has been found that some species are more widely distributed between the different areas of the moor than was recorded in the lists published in the 1992 issue of "Proceedings". Also twenty new records have been added to the list for the whole of the moor. Some of the new records are for plants that occur only around the Nab itself and are marked by an asterisk in the list below. The area around the Nab has a mean pH of 6.8 and thus is less acid than most other areas of the moor. It is the site of a former habitation "Beacon House" that was demolished in 1956. The stone pillar that now marks Eston Nab was erected on the site.

| | |
|---|---|
| * *Anthyllis vulneraria* | Kidney-vetch |
| * *Arctium minus ssp.minus* | Lesser Burdock |
| * *Brassica rapa ssp.oleifera* | Oil-seed Rape |
| *Cardamme hirsuta* | Hairy Bitter-cress |
| *Chaerophyllum temulentum* | Rough Chervil |
| *ChenopocUum album* | Fat Hen |
| * *Chenopodium bonus-henricus* | Good King Henry |
| *Galeopsis bifida* | Two-lipped Hemp-nettle |
| * *Lactuca virosa* | Great Lettuce |
| *Polygonum persicana* | Persicaria |
| *Prunus spinosa* | Blackthorn |
| *Pulmonaria saccharata* | Lungwort |
| *Quercus cerns* | Turkey Oak |
| *Rubus idaeus* | Raspberry |
| *Senecio vulgaris* | Groundsel |
| *Sonchus arvensis* | Perennial Sow-thistle |
| *Succisa pratensis* | Devil's-bit Scabious |
| *Tripleurospermum modorum* | Scentless Mayweed |
| *Veronica persica* | Large Field Speedwell |
| *Vicia sativa ssp.nigra* | Narrow Leaved Vetch |
| *Vicia sepium* | Bush Vetch |

Darroll Fryer, November 1992

## Bryophyte Recording in Cleveland

I became seriously interested in Mosses and Liverworts in September 1990. Whilst learning about these fascinating plants I decided to record those found in the Cleveland County area on a systematic basis. The project has since taken me over.

Cleveland does not have the rich bryophtye cover of the wetter western and more northerly parts of Britain. However the County has a sufficient variety of habitats to make recording interesting. This consists of a small amount of limestone in the North of the County, heather moorland and gills in the South, and a great deal of farmland in between. We have coastal dunes, saltmarsh, cliffs, and some deep wooded valleys in the South East. The river Tees flows through the County to the sea at Teesmouth.

At the end of 1992 each of the 189 part or complete tetrads (2 x 2 km.) in Cleveland has been visited. This has produced 5300 records to date and a total of 227 species have been identified. Each tetrad record has been dot-mapped on species cards and distribution patterns are now becoming apparent. There is still a great deal of work to do and I expect to spend at least three more years on the project.

My thanks are due to Mr. Blockeel, Rev. G.G. Graham, and Mr. S. Wharton for their help in identifying specimens, and members of the Cleveland Naturalists Field Club for their support and encouragement.

**J.M. Blackburn**

## Guisborough Branch Walkway

A number of species that were recorded in 1991, some of them annuals, have not been evident in 1992. Among them are: White Mustard (*Sinapis alba)*, Caper Spurge *(Euphorbia lathyrus*), Beggar Ticks, *(Bidens frondosa)* Corn Cockle *(Agrostemo githago),* Corn Marigold *(Chrysanthemum segetum)* and Smooth Tare *(Vicia tetrasperma).* The various species of fumitory have diminished as the sites, bare earth, that they colonized have been overgrown by other plants. Only Common Fumitory *(Fumaria officinalis)* has been evident during 1992.

Newly recorded species are:

| | |
|---|---|
| *Adoxa moschatellina* | Moschatel |
| *Aesculus hippocastanum* | Horse-chestnut |
| *Agrostis capillaris* | Common Bent |
| *Avena sativa* | Cultivated Oat |
| *Cardamine hirsuta* | Hairy Bitter-cress |
| *Catabrosa aquatica* | Water Whorl-grass |
| *Crassula helmsii* | Perennial Water Tillaea |
| *Elodea canadensis* | Canadian Pondweed |
| *Epilobium parviflorum* | Hoary Willowherb |
| *Erophila verna* | Spring Whitlow Grass |
| *Hieracium vagum* | Shrubby Hawkweed |
| *Hypericum androsaemum* | Tutsan |
| *Myosotis scorpioides* | Water Forget-me-not |
| *Poa chaixii* | Broad-leaved Meadow-grass |
| *Poapratensis* | Smooth-stalked Meadow-grass |
| *Sanguisorba officinalis* | Great Burnet |
| *Senecio erucifolius* | Hoarv Ragwort |
| *Senecio squalidus* | Oxford Ragwort |
| *Torilis japonica* | Upright Hedge-parsley |
| *Trictum aestivum* | Cultivated Wheat |

## South Gare

(Note-In this report South Gare is interpreted to be the breakwater and associated dune system covered by O.S. Grid Squares NZ5527, NZ5528, NZ5626, NZ5725, and NZ 5825, which is a rather wider definition than commonly used.)

### The Origin of South Gare

The River Tees has been an important trading river for many centuries. In the last 150 years large scale industries of many types have been established on the banks of the River Tees. The river has played an important part in the import of raw materials to these industries and the port of final products. This has been particularly the case for the iron and steel business. The town of Middlesbrough was founded in 1830 as a coal port. Nine years later Henry Bolkow and John Vaughn established the first ironworks. These works, and those established during the rest of the nineteenth century, used ore from local iron deposits exploited primarily by mines in East Cleveland, Guisborough, Eston, and Upleatham. The waste products of the iron and steel business provided the raw material for the construction of South Gare. As the volume of trade increased the problems of navigation in the river became acute. Some improvements had been made to the river between Middlesbrough and Stockton by cutting off significant meanders to straighten its course but improvements were needed downstream. To solve these problems a Tees Conservancy Commission was set up in 1858.

The river flowed through many channels from Middlesbrough to the sea, and these were constantly changing. A number of channels were blocked off to leave one main channel and training walls were then built to make the channel more permanent. Large quantities of slag were produced as a waste product from the ironmaking process and this was used to construct the walls. In 1853 dredging in the channel began and dangerous rocks were removed.

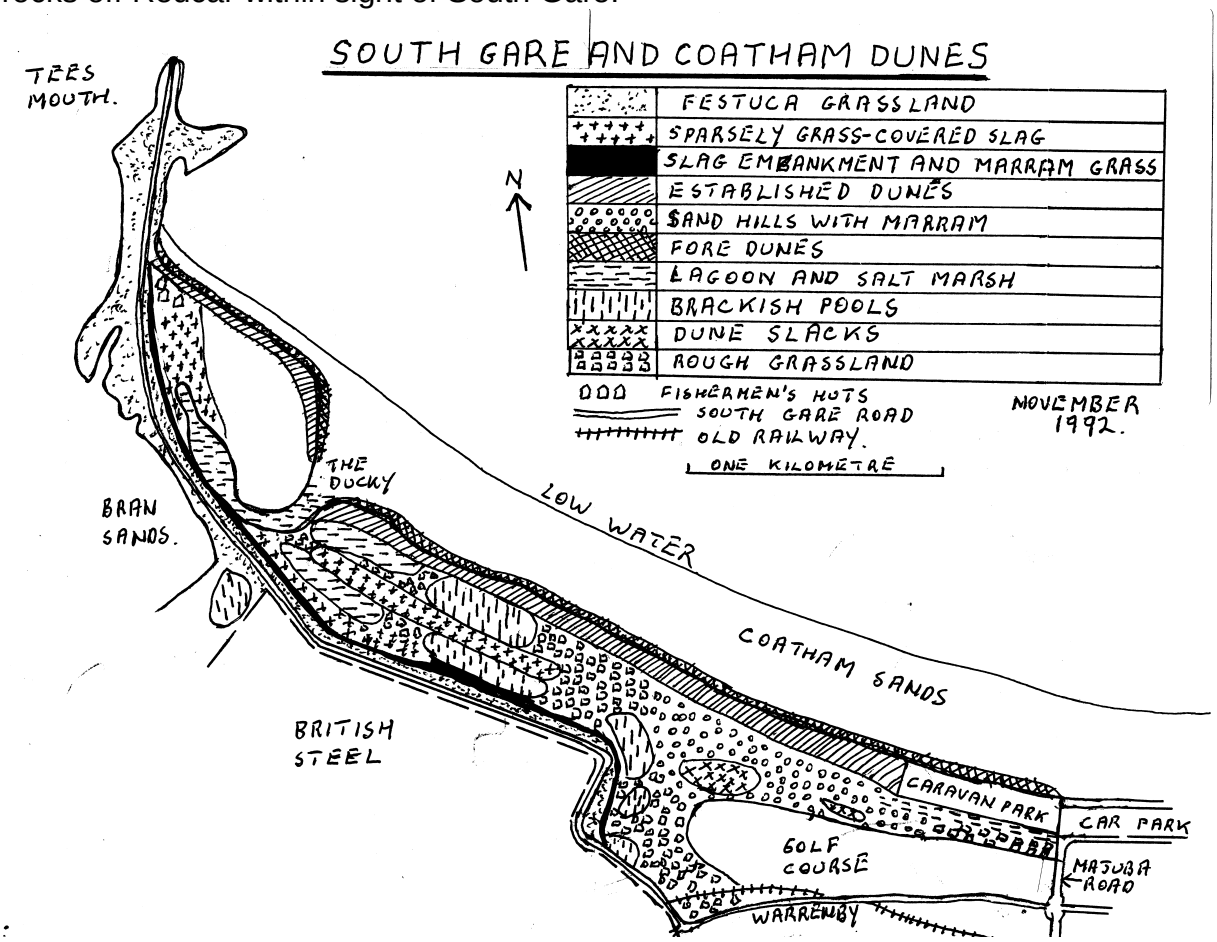
In 1861 about 60 ships were wrecked after a severe storm and many lives were lost. It was then decided to create a safe harbour within the Tees. As a result of this the North and South Gare breakwaters were constructed. An estimated 5,000,000? tons of slag and 18000 tons of cement were used. The South Gare is 2.5 miles in length. Work started in January 1861 and the breakwater was officially opened in 1888. The North Gare breakwater was started in 1882 and took 9 years to build.

Limestone is used in the production of iron. Consequently the slag, which remains after ironmaking, is rich in Calcium and Magnesium Carbonates. South Gare therefore attracts many lime-loving plants (calcicoles). When the retaining walls were built at North and South Gare a dune system gradually became established on the seaward side, and in places saltmarshes were formed inside these walled areas giving rise to an interesting salt marsh flora. During the 1970’s British Steel established its works on the edge of South Gare. Certain areas were flooded to give a regular water supply to the works, and more slag was tipped in the areas.

Despite the fact that this area is man-made and an industrial site, over the years a unique flora and fauna have become established. A Site of Special Scientific Interest has been established on a large portion of the Gare

and associated dunes. Recently Amoco have built a pipeline across the dunes but special precautions were taken to protect the dune structure and vegetation. South Gare is used for various leisure pursuits. There is a small fishing community at Paddy's Hole and other fishermen come regularly to use the breakwater. There is a yacht Club, Lifeboat Station and Coastguard Station. The Gare is regularly used by members of Teesmouth Bird Club. and other ornithologists. to study both resident populations and migratory species. The Gare supports a notable breeding colony of Little Terns.

The survival of the dune systems and saltmarsh communities are threatened by expanding leisure interests, particularly illegal motorbike scrambling, industrial expansion, and pollution. The Little Tern colony is particularly at risk from disturbance and in 1992 was seriously threatened by an oil spill. At the time of writing (March 1993) an oil tanker was aground on rocks off Redcar within sight of South Gare.



## Vascular Plants

The vegetation of the area between the South Gare and Coatham is very diverse because of the different habitats, which exist along that stretch. Much of it is well established coastal grassland with native species still thriving but there has been much disturbance to this habitat in recent years resulting in the invasion of alien species. Many have moved in from the neighbouring industrial sites and these have increased during the last thirty years or so.

The coastal grassland includes both the established dune system and the fore-dunes, which are in the process of becoming established. Here *Elytrigia juncea* (Sand Couch) is the first coloniser followed by *Ammophila arenaria* (Marram Grass), *Leymus araenarium* (Lyme Grass) and Carex arenaria (Sand Sedge). In this situation *Senecio squalidus* (Oxford Ragwort) takes the opportunity of jumping into the bare spaces amongst the *Marram* and is often joined by a refugee from the cornfields. *Sonchus arvensis* (Corn Sowthistle).

Growing on the sand immediately in front of the fore-dunes are

| | |
|---|---|
| *Cakile maritima* | Sea Rocket |
| *Honkenya peploides* | Sea Sandwort |
| *Atriplex laciniata* | Frosted Orache |

And in one area *Salsola kali* (Prickly Saltwort).

Behind the established dunes are the dune slacks, which are often water filled according to the season. Here, quite often. *Puccinellia maritima* (Common Salt-marsh Grass) is the dominant grass or, where the water is less saline, *Agrostis* stolonifera (Creeping Bent-grass) and *Alopecurus geniculata* (Marsh Foxtail) are the most frequent. Near to the breakwater itself is an inlet to the seaward side of the road, known as the lagoon. This is an important area for its flora as it depends on the influx of the sea during spring tides to maintain the salinity of the area and the consequent survival of the plants that grow there. Their existence has been very precarious in the last decade or so as changes in the landscape due to industrial development have led to the inflow of freshwater resulting in large brackish pools being established with the subsequent invasion of plants such as

| | |
|---|---|
| *Scirpus maritimus* | Sea Club-rush |
| *Schoenoplectus tabernaemontani* | Grey Club-rush |
| *Typha latifolia* | Reed-mace |
| *Phalaris arundinacea* | Reed Canary Grass |

A similar situation occurs in Warrenby Marshes alongside the Tod Point road. Here grow

| | |
|---|---|
| *Eupatorium cannibinum* | Hemp Agrimony |
| *Caradamine pratensis* | Cuckoo Flower |
| *Oenanthe lachnalii* | Parsely Water Dropwort (very local) |

The periphery of the golf course contains some of the finest dune grassland in the area. Because it is relatively undisturbed its flora is extremely rich.

**Breakwater Road**

The vegetation along either side of the breakwater road itself contains not only sand dune species, but other colonisers suited to the hard core slag which forms the structural foundations of the breakwater. There are also several garden throw-out species, which have become well established in places. These include

| | |
|---|---|
| *Euphorbia cyparissias* | Cypress Spurge |
| *Sedum album* | White Stonecrop |
| *Lobularis maritima* | Sweet Alison |
| *Cerastium tomentosum* | Snow-in-Summer |
| *Crocosmia x crocosmiiflora* | Montbretia |
| *Oxalis articulata* | Pink-sorrel |
| *Geranium lucidum* | Shining Cranesbill |
| *Iris germanica* | Bearded Iris |

Roadside plants along here include

| | |
|---|---|
| *Silene alba* | White Campion |
| *Silene vulgaris* | Bladder Campion |
| *Diplotaxis tenuifolia* | Perennial Wall-rocket |
| *Reseda lutea* | Wild Mignonette |
| *Heracleum sphondylium* | Hogweed |
| *Conium maculatum* | Hemlock |

Where compacted slag is found sparsely grass-dominated plants such as

| | |
|---|---|
| *Euphrasia nemorosa* | |
| *Euphrasia tetraquetra* | Eyebrights |
| *Linum catharticum* | Fairy Flax |
| *Sedum acre* | Biting Stonecrop |
| *Erigeron acer* | Blue Fleabane |
| *Blackstonia perfoliata* | Yellowwort |
| *Centaurium erythraea* | Centaury |
| *Viola hirta* | Hairy Violet |
| *Leontodon taraxacoides* | Lesser Hawkbit |
| *Lotus corniculatus* | Bird’s Foot Trefoil |
| *Potentilla reptans* | Creeping Cinquefoil |

abound. *Fragaria vesca* (Wild Strawberry) grows in one area.

***Festuca* Swards**

The plant species growing on established *Festuca* grass wards are

| | |
|---|---|
| *Astragalus danicus* | Purple Milk Vetch |
| *Erodium cicutarium* | Storks-bill |
| *Achillea millefolium* | Yarrow |
| *Primula versis* | Cowslip |
| *Stellaria pallida* | Lesser Chickweed |

On the bare patches grow

| | |
|---|---|
| *Plantago coronopus* | Buckshorn Plantain |
| *Plantago lanceolata* | Ribwort Plantain |
| *Bellis perennis* | Daisy |
| *Senecio jacobaea* | Common Ragwort |

**Established Dunes**

On the nearby established dunes, are several of the above species along with

| | |
|---|---|
| *Erophila verna* | Spring Whitlow Grass |
| *Ononis repens* | Creeping Rest Harrow |
| *Cerastium fontanum* | Mouse-ear Chickweed |
| *Cerastium semidecandrum* | Little Mouse Ear |
| *Hieracium pilosella* | Mouse-ear Hawkweed |
| *Geranium molle* | Dove's Foot Cranesbill |
| *Galium verum* | Lady's Bedstraw |
| *Taraxacum laevigatum* | Lesser Dandelion |
| *Thalictrum minus* | Lesser Meadow Rue |
| *Viola canina* | Heath Dog-violet (very local) |

***Marram* Establshed Dunes**

The *Marram* established dunes stretch along the coast immediately behind the fore-dunes. They are also built up against the breakwater itself and thus line the Lagoon area with a more or less continuous swathe of the saltmarsh grass *Puccinellia maritima* bordering the mudflat of the Lagoon. These sandhills support plants such as

| | |
|---|---|
| *Hypochoeris radicata* | Cats-ear |
| *Hieracium vulgatum agg.* | Hawkweed |
| *Hieracium vagum* | Leafy Hawkweed |
| *Beta vulgatris subsp. Maritima* | Sea Beet |
| *Cerastium diffusum* | Sea Mouse Ear |
| *Equisetum arvense* | Common Horsetail |
| *Sonchus oleraceus* | Smooth Sow-thistle |
| *Trifolium campestre* | Hop Trefoil |
| *Traxacum agg.* | Dandelion |
| *Potentilla anserina* | Silverweed |
| *Diplotaxis tenuifolia* | Perennial Wall Rocket |
| *Diplotaxis muralis* | Annual Wall Rocket |

| | |
|---|---|
| *Stellaria media* | Common Chickweed |
| *Tanacetum vulgare* | Tansy |
| *Tussilago farfara* | Coltsfoot |
| *Geranium sanguineum* | Bloody Cranesbill |
| Is still managing to survive in one area | |
| *Smyrnium olusatum* | Alexanders |
| Has been established for some time in a hollow nearby | |

**The Lagoon Area**

The plants of the Lagoon area have a precarious existence depending largely upon tidal influxes, which are not nearly so frequent as they used to be owing to sand buildup at the entrance. These comprise

| | |
|---|---|
| *Armeria maritima* | Thrift |
| *Limonium vulgare* | Sea Lavender |
| *Atriplex littoralis* | Grass-leaved Orache |
| *Halimione portulacoides* | Sea Purslane |
| *Aster tripolium* | Sea Aster |
| *Spergularia media* | Greater Sea Spurrey |
| *Spergularia marina* | Lesser Sea Spurrey |
| *Tiglochin maritima* | Sea Arrow-grass |
| *Salicornia europaea* | Marsh Samphire |
| *Suaeda maritima* | Annual Seablite |
| *Suaeda vera* | Shrubby Seablite-introduced |
| *Juncus bufonius* | Toad Rush |
| *Juncus ambiguus* | Frog Rush |
| *Juncus gerardii* | Salt-marsh Rush |
| *Puccinellia maritima* | Common Salt-marsh Grass |
| *Puccinellia distans* | Reflexed Salt-marsh Grass |
| *Carex distans* | Distant sedge |
| *Carex extensa* | Long-bracted Sedge |
| *Carex otrubae* | False Fox Sedge |
| *Glaux maritima* | Sea Milkwort |
| *Centaurium pulchellum* | Lesser Centaury |
| *Parapholis strigosa* | Sea Hard-grass |

**Permanent Brackish Water**

In the permanent brackish water areas are

| | |
|---|---|
| *Scirpus maritimus* | Sea Club-rush |
| *Scirpus tabernaemontani* | Grey Club-rush |
| *Typha latifolia* | Great Reed-mace |
| *Phalaris arundinacea* | Reed Canary Grass |
| *Zannichellia palustris* | Horned Pondweed |
| *Oenanthe crocata* | Hemlock Water Dropwort-in one place |

In years when the mud tends to dry out invasive species such as

| | |
|---|---|
| *Chenopodium rubrum* | Red Goosefoot |
| *Chenopodium glaucum* | Oak-leaved Goosefoot |
| *Atriplex prostrata* | Spear-leaved Orache |
| *Atriplex littoralis* | Grass Leaved Orache |

tend to take over.

**Compact Slag Area**

The compact slag area to the North of the lagoon, and in similar places elsewhere supports

| | |
|---|---|
| *Carlina vulgaris* | Carline Thistle |
| *Erigeron acer* | Blue Fleabane |
| *Linaria vulgaris* | Common Toadflax |
| *Reseda lutea* | Wild Mignonette |
| *Hieracium vulgatum* | Common Hawkweed |
| *Sedum acre* | Biting Stonecrop |
| *Senecio squalidus* | Oxford Ragwort |
| *Diplotaxis tenuifolia* | Perennial Wall Rocket |
| *Rubus fruticosus agg.* | Blackberry |
| *Catapodium marinum* | Sea Fern-grass |
| *Aira praecox* | Early Hair Grass |

**Either side of breakwater**

Other species which are to be seen on either side of the breakwater are

| | |
|---|---|
| *Artemesia vulgaris* | Mugwort |
| *Carduus nutans* | Nodding Thistle |
| *Cirsium arvense* | Creeping Thistle |
| *Conium maculatum* | Hemlock |
| *Hracleum sphondylium* | Hogweed |
| *Lactuca virosa* | Large Lettuce-increasing |
| *Silene alba* | White Campion |
| *Silene vulgaris* | Bladder Campion |
| *Senecio jacobaea* | Common Ragwort |
| *Senecio erucifolius* | Hoary Ragwort |
| *Rumex crispus* | Curled Dock |
| *Echium vulgare* | Viper's Bugloss |
| *Cerastium tomentosum* | Snow-in-Summer |
| *Chamerion angustifoilium* | Rosebay |
| *Pteridium aquilinum* | Bracken |
| *Pastinaca sativa* | Wild Parsnip |
| *Malva sylvestris* | Common Mallow |
| *Lapsana communis* | Nipplewort |

| | |
|---|---|
| *Tripleurospermum maritimum* | Sea Mayweed |
| *Trifolium pratense* | Red Clover |
| *Sisymbroium altissimum* | Tall Rocket |
| *Sisymbrium orientale* | Eastern Rocket |
| *Urtica dioica* | Common Stinging Nettle |

*Trifolium fragiferum* once occurred in two places but its status is uncertain at this moment.

**Cleveland Golf Course**

The Cleveland Golf Course stretches from the Tod Point Road and Warrenby Marshes right through to Coatham. It is possible to walk between the main dunes and the golf course, which is flanked by low fixed dunes. This well established *Lolium/Festuca* grassland contains

| | |
|---|---|
| *Dactylis glomerata* | Cocksfoot |
| *Holcus lanatus* | Yorkshire Fog |
| *Hordeum murinum* | Wall Barley |
| *Poa annua* | Annual Meadow Grass |
| *Bromus hordaceus* | Soft Brome Grass |
| *Loilium perenne* | Well established in many places |
| *Arrenatherum elatius* | Occurs widely and gives rise to rough grassland which form large areas towards Redcar. |

Many of the species occurring in the *A. elatius* grassland have already been mentioned but in addition the following are found

| | |
|---|---|
| *Cerastium fontanum* | Common Mouse-ear |
| *Arenaria serpyllifolia* | Thyme-leaved Speedwell |
| *Geranium molle* | Dove's Foot Cranes-bill |
| *Leontodon hispidus* | Rough Hawkbit |
| *Linum catharticum* | Fairy Flax |
| *Rhinanthus minus* | Yellow Rattle |
| *Daucus carota* | Wild Carrot |
| *Potentilla reptans* | Creeping Cinquefoil |
| *Odontites verna* | Red Bartsia |
| *Tragopogon minus* | Goat's Beard |
| *Trifolium arvense* | Hare's Foot Clover |
| *Ranunculus acris* | Meadow Buttercup |
| *Ranunculkus repens* | Creeping Buttercup |
| *Dactylorhiza purpurella* | Northern Marsh Orchid |
| *Dactylorhiza fuchsii* | Common Spotted Orchid |
| *Gymnadenia conopsea* | Fragrant Orchid |

On the fixed dunes around the golf course

| | |
|---|---|
| *Cerastium arvense* | Field Mouse-ear |
| *Cerastium semidecandrum* | Little Mouse-ear |

| | |
|---|---|
| *Phleum arenarium* | Sand Catstail |

occur.

**Wetter areas on the Golf Course**

In the wetter areas where *Agostis stolonifera* (Creeping Bent Grass) is dominant are

| | |
|---|---|
| *Hydrocotyle vulgaris* | Marsh Pennywort |
| *Equisetum palustre* | Marsh Horsetail |
| *Carex hirta* | Hairy Sedge |
| *Juncus articulatus* | Jointed Sedge |
| *Juncus inflexus* | Hard Rush |
| *Eleocharis uniglumis* | Slender Spike Rush |
| *Eleocharis quinqueflora* | Few-flowered Spike Rush |
| *Eleocharis palustris* | Marsh Spike Rush |
| *Triglochin palustris* | Marsh Arrow Grass |
| *Myosotis laxa* | Tufted Water Forget-me-not |
| *Veronica catenata* | Pink Water Speedwell |
| *Pulicaria dysenterica* | Yellow Fleabane |
| *Ranunculus flammula* | Lesser Spearwort |
| *Ranunculus sceleratus* | Celery Leaved Crowfoot |
| *Ranunculus baudotii* | Brackish Water Crowfoot |
| *Ranunculus trichophyllus* | Thread Leaved Water Crowfoot |
| *Myriophyllum spicatum* | Spiked Water Milfoil |
| *Angelica sylvestris* | Wild Angelica |
| *Epilobium hirsutum* | Great Hairy Willowherb |
| *Epilobium parviflorum* | Hoary Willowherb |
| *Carex otrubae* | False Fox Sedge |
| *Equisetum telmateia* | Giant Horsetail |
| *Galium palustre* | Marsh Bedstraw |
| *Groenlandia densa* | Opposite leaved Pondweed |
| *Blysmus compressus* | Flat Sedge grows in the damp short turf at one end of the golf course. |

**Alien Species on the Dune System**

Several alien species have established themselves in the dune system near Coatham and have been recorded here for several years . These include

| | |
|---|---|
| *Cichorium intybus* | Chicory |
| *Petroselinum crispum* | Parsley |
| *Armoracia rusticana* | Horse Radish |
| *Mentha spicata* | Spearmint |
| *Gladiolus byzantinus* | Eastern Gladiolus |
| *Spartium junceum* | Spanish Broom |
| *Solidago canadensis* | Canadian Goldenrod |
| *Iris germanica* | Bearded Iris |
| *Coronilla varia* | Crown Vetch |

| | |
|---|---|
| *Cardaria draba* | Hoary Cress |
| *Melilotus alba* | White Melilot |
| *Melilotus altissima* | Tall Melilot |
| *Papaver somniferum* | Opium Poppy |
| *Papaver rhoeas* | Field Poppy |
| *Trifolium hybridum* | Alsike Clover |
| *Sisymbrium officinale* | Hedge Mustard |
| *Sisymbrium altissimum* | Tall Rocket |
| *Sisymbrium orientale* | Eastern Rocket |
| *Lycium barbarum* | Duke-of-Argyll's Tea Plant |

**Native Species in the Dune System**

Native species include

| | |
|---|---|
| *Senecio vulgaris* | Common Groundsel |
| *Potentilla anserina* | Silverweed |
| *Lamium album* | White Dead Nettle |
| *Anthriscus sylvestris* | Cow Parsley |
| *Fumaria officinalis* | Common Fumitory |
| *Ranunculus bulbosus* | Bulbous Buttercup |
| *Leucanthemum vulgare* | Ox-eye Daisy |
| *Sinapsis arvensis* | Charlock |
| *Vicia sativa subsp. Sativa* | Common Vetch |
| *Sanguisorba minor* | Salad Burnet |
| *Conopodium majus* | Pignut |
| *Trifolium repens* | White Clover |
| *Poa pratensis* | Smooth Meadow Grass |

The following pH readings have been taken at various points in the habitats listed below. The means are as follows

| | |
|---|---|
| The Marram Sandhills | 7.0 |
| Established Dunes | 6.9 |
| Dune Slacks (Dry area) | 6.5 |
| Dune Slack (Wet area) | 4.8 |
| *Agrostis stolonifera* | 6.5 |

**Bryophytes**

The predominant bryophyte cover is over the fixed dunes, the compact slag, the grassy areas around the Golf Course and towards the end of the breakwater. The establishing fore-dunes are devoid of cover as the habitat is too unstable.

The grassy areas support the following common species

*Brachythecium albicans*
*B. rutabulum*

*B. velutinum*
*Eurhynchium praelongeum*
*Pseudoscleropodium purum*
*Rhynchostegium confertum*

The fixed dunes, particularly abutting the breakwater road, include

*Brachythecium albicans*
*Tortula ruralis ssp. Ruraliformis*

The compact slag areas, where the greatest variety occurs, support the following,

*Amblystegium serpens*
*Barbula convoluta*
*Barbula fallax*
*Barbula recurvirostra*
*Barbula unguiculata*
*Bryum argentum*
*Bryum bicolor*
*Bryum capillare*
*Ceratodon pupureus*
*Encalypta streptocarpa (uncommon)*
*Funaria hygrometica*
*Hypnum cupressiforme*
*Polytrichum juniperinum*
*Pottia intermedia (rare in Cleveland)*
*Tortula muralis*

The permanent brackish water area has *Drepanocladus aduncus*

**Fungi**

Much to the surprise of naturalist and the general public sand dune habitats are actually quite rich in fungal species. Unfortunately this habitat type has been rather neglected in textbooks on fungi and as a result many characteristic species remain un-illustrated in the commonly used field guides. The dune habitats on either side of Teesmouth have not, to date, been thoroughly investigated, and no attempt is made here to be comprehensive. The following list does, however, summarise the fungal component of these systems as presently known and may provide a stimulus to further work in this area. The abbreviations used are

YNU91 – Yorkshire Naturalists Union Mycological Section Spring Foray 1991, Redcar
AW – Alex Weir
AWL- A.W. Legg (Darlington)
RC- R. Crundell (Harrogate)

*Acremoniella atra*

On *Ammophila* (?)(YNU91)

*Dasyscyphus mollissimus*
On *Urtica dioica* (YNU91)
*Herpotrichia macrotrictia*
On *Epilobium* stems (YNU91)
*Ophiobolus acuminatus*
On *Cirsium arvense* (YNU91)
*Puccinia hieracii var. piloselloidarnia*
On *Hieracium pilosella* (AW91)
*Puccinia punctiformis*
On *Cirsium arvense* (AW91)
*Puccinia variabilis*
On *Taraxacum officinale* (AW91)
*Uromyces lineolata*
On *Oenanthe* (YNU91)
*Pilaira anomala*
Incubated hare dung (AWL)
*Peziza ammophila*
At base of *Ammophila*
*Chaetomium elatum*
Incubated hare dung (AWL)
*Claviceps purpurea*
On grass (AWL)
*Lophiostoma caulium*
Base of dead stems of *Elymus* sp. (AWL)
*Schizothecium tetrasporum*
Incubated hare dung (AWL)
*Sodaria fimicola*
Incubated hare dung (AWL)
*Sordaria lappae*
Incubated hare dung (AWL)
*Clitocybe phyllophila*
*Crinipellis stipitarius* (AW92)
*Hohenbuelia culmicola*
On bases of dead *Elymus* sp. (AWL)
*Hypholoma laeticolor* (AWL)
Melanoleuca cinereifolia
3rd British record (RC)
*Omphalina pyxidata* (AWL)
*Panaeolus subalteatus* (AWL)
*Psathyrella ammophila* (YNU91)
*Stropharia coronilla* (AWL)
*Cyathus olla*
At base of *Elymus* (AWL)
*Doratomyces micosporus*
Incubated hare dung (AWL)

**Lepidoptera (Moths and Butterflies)**

South Gare has many of the characteristics of Spurn Point on Humberside. It is interesting to note that Spurn has recorded 611 species. The

records below have been compared with information in *Butterflies and Moths of Yorkshire* (S. L. Sutton and H.E. Beaumont*), Moths and Butterflies of Northumberland and Durham* (T.C. Dunn and J.D. Parrack), *and The Moths of Spurn Point* (B.R. Spence). The records were made by P. Waterton and M. Birtle.

| | |
|---|---|
| *Hepialus sylvina* | Orange Swift |
| *Stenodes straminae* | Straw Short Barred Conch |
| *Agapeta hamana* | Hook Marked Conch |
| *Cochylis dubitana* | Doubtful Dwarf Conch |

Very sparingly seen in Yorkshire and Durham

| | |
|---|---|
| *Aphelia paleana* | Timothy Tortrix |
| *Lobesia littoralis* | Short Doubtful Marble |

Not recorded in other coastal areas of Yorkshire, but has been found in such habitats in Northumberland.

| | |
|---|---|
| *Cydia succedana* | Light Striped Edged Piercer |

Not recorded at Spurn.

| | |
|---|---|
| *Crambus perlella* | Yellow Satin Grass Veneer |
| *Agriphila geniculea* | Elbow-striped Grass Veneer |
| *A. tristella* | Common Grass Veneer |
| *Agapeta hamana* | Hook Marked Conch |
| *A. zoegana* | Zoega's Conch |
| *Scoparia pyralella* | Hoary Grey |
| *Piludoria potatoria* | The Drinker |
| *Epirrhoe alternata alternata* | Common Carpet |
| *Captogramma bilineata bilineata* | Yellow Shell |
| *Perizoma albulata albulata* | Grass Rivulet |
| *Eupithecia centaureata* | Lime-speck Pug |
| *Phalera bucephala* | Buff-tip |
| *Macroglossum steltarum* | Humming-bird Hawk-moth |
| *Arctia caja* | Garden Tiger |
| *Phragmatobia fuliginosa fuliginosa* | Ruby Tiger |
| *Tyria jacobaeae* | Cinnabar |
| *Euxoa tritici* | White-line Dart |
| *Agrostis vestigialis* | Archers Dart |
| *Noctua pronuba* | Large Yellow Under wing |
| *Hada nana* | The Shears |
| *Sideridis albicolon* | White Colon |

Only otherwise found at Spurn

| | |
|---|---|
| *Lacanobia suasa* | Dogs Tooth |

Recently found at Greenabella Marsh, north of the river

| | |
|---|---|
| *Hecatera bicolorata* | Broad-barred White |

Regarded as local

| | |
|---|---|
| *Hadena perplexa perplexa* | Tawny Shears |
| *Hadena confusa* | Marbled Coronet |

Not common in coastal sites

| | |
|---|---|
| *Hadena bicruris* | The Lychnis |
| *Cerapteryx graminis* | Antler Moth |
| *Mythimna impura impura* | Smoky Wainscot |

| | |
|---|---|
| *Mythimna pallens* | Common Wainscot |
| *Cryphia domestica* | Marbled Beauty |
| *Thalpophila matura* | Straw Underwing |
| *Apamea oblonga* | Crescent Striped |

This may be the most northerly coastal record. Used to be at Greatham Saltmarsh but not recorded recently.

*Apamea anceps* Large Nutmeg

Very local in Yorkshire. Not recorded since the turn of the century in Durham.

| | |
|---|---|
| *Oligia strigilis* | Marbled Minor |
| *Oligia fasciuncula* | Middle-barred Minor |
| *Mesoligia furuncula* | Cloaked Minor |

Not common.

| | |
|---|---|
| *Mesoligia literosa* | Rosy Minor |
| *Luperina testacea* | Flounced Rustic |
| *Nonagria typhae* | Bulrush Wainscot |
| *Autographa gamma* | Silver Y |

| | |
|---|---|
| *Polyommatus icarus* | Common Blue |
| *Lasiommata megera* | Wall Brown |
| *Maniola jurtina* | Meadow Brown |
| *Coenonympha pamphilus* | Small Heath |
| *Pieris brassicae* | Large White |

**Terrestrial Molluscs**

| | |
|---|---|
| Vitrina pellucida | Pellucid Snail |
| *Candidula intersecta* | Wrinkled Snail |
| *Cernuella virgata* | Striped Snail |
| *Helix aspersa* | Common Snail |
| *Discus rotundatus* | Rounded Snail |
| *Oxychilus draparnaldi* | Drepanaud's Snail |
| *Oxychilus alliarius* | Garlic Snail |
| *Capaea nemoralis* | Brown-lipped Banded Snail |

Coastal dunes and slacks are harsh environments for terrestrial molluscs. Although calcium (required for shell formation) is usually abundant, such habitats are dry and a ground layer is usually lacking. Few species can cope with such conditions, but those which are able to do so, are frequently abundant. In the South Gare/Coatham Dunes area this is true of *C. intersecta*, *C. virgata, C. nemoralis*, and *H.aspersa*. Additionally *V. pellucida* occurs in large numbers and at high densities in some of the dune slacks. It has a marked annual, life cycle, maturing in the winter months and laying eggs in the early spring after which the adults die. Eggs hatch in early autumn. The advantage of this life-cycle may be to allow the adults of this thin shelled species to avoid the rigours of hot dry weather. *O. draparaldi* seems to be uncommon in the Cleveland area, hence the location of a colony here in 1991 is noteworthy. It is surprising that no slugs have been recorded, the ubiquitous

Black Slug, *Arion ater*, may well have been overlooked. Indeed the above list of terrestrial molluscs is likely to be generally incomplete.

## Miscellaneous Records

The following have also been recorded

| | |
|---|---|
| *Bufo bufo* | Common Toad |
| *Haemopsis sanguisuga* | Horse Leeches |
| *Philoscia muscorum* | Woodlice |
| *Porcelio scaber* | |

## Lichens

On the old concrete walls at the end of the breakwater

*Lecanora dispersa*
*Phaeophyscia orbicularis*
*Caloplaca citrina*

## Field Meetings 1993

| DATE | TIME | AREA OF WALK | LEADER | MEETING PLACE |
|---|---|---|---|---|
| Sun.April 25th | 11.00am | Embleton area | Maurice Hallam | Car Park at the old Wynyard station |
| Wed. May 5th | 6.45pm | Newton Woods | Kath Dilworth | Newton-under-Roseberry Car Park |
| Wed. May 12th | 7.00pm | Thorpe Wood | Bruce Ferguson | Castle Eden Walkway Car Park |
| Sat. May 15th | 11.00am | Arkengarthdale | Joan Bradbury | Langthwaite Parish Church |
| Wed. May 19th | 2.00pm | Rievaulx Area | Maurice Ward | Abbey Car Park |
| Sun. May 23rd | 2.00pm | Rosecroft & Loftus Woods | Darroll Fryer | Loftus Main Car Park |
| Wed. May 26th | 7.00pm | Crow Wood, Ormesby* | lan Lawrence | Rothesay Grove, Ormesby |
| Wed. June 9th | 6.45pm | Lovell Ponds* | Alex Weir | Wilton Field Centre |
| Wed. June 16th | 7.00pm | Bluebell Beck, W. Plantation | lan Lawrence | Mandale Interchange Car Park |
| Sat. June 19th | 11.00am | Hummersea* | Pat Wood | The shore Car Park, Skinningrove |
| Wed. June 23th. | 7.00pm | Crookfoot Reservoir | Vincent Jones | Reservoir approach-road |
| Sun. June 27th | 11 .00am | Weardale | Norma Padgin | Westgate village |
| Wed. June 30th | 7.00pm | Larchfield Farm | Vincent Jones | Lay-by at Stainton Grange |
| Sat. July 3rd | 2.00pm | Beckdale, Heirnsley | Norman Thompson | Castle Car Park |
| Wed. July 7th | 7.00pm | Carter Moor near Urlay Nook | Rob Scaife | Urlay Nook, level-crossing |
| Sun. July 11th | 11.00am | Hamsterley Forest | Brian Walker | Visitor-Centre Car Park |
| Wed July 14th | 7.00pm | Hutton Rudby area | lan Lawrence | Meet at the Parish Church |
| Wed. July 21st | 7.00pm | Charlton's Pond* | Maurice Hallam | Hereford Terrace near the pond |
| Sun. Aug. 1st | 11.00am | Broadway Foot Farm | Eric Gendle | Opposite Hawnby road end |
| Wed. Aug. 4th | 2.00pm | Osmotherly area | Maurice Ward | Sheepwash Car Park |
| Sat. Aug. 7th | 2.00pm | Botton Village, Danby Dale | John Blackburn | Botton Car Park |
| Sat. Aug.22nd | 2.00pm | Stanghow | Darroll Fryer | Birk Brow Car Park |

| | | | | |
|---|---|---|---|---|
| Sat Sept. 18th | 1.00am | Moor area Arncliffe Wood,Egton Bridge | Ian Lawrence | Glaisdale Bridge |
| Sun. Oct. 17th | 11.00am | Fungus Foray. | Alex Weir | Venue to be arranged |