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Sketch Notes of the Flora of Berwickshire

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distinct in character, yet so alike in their profuse proliferousness, should have originated simultaneously and within a few inches of each other. Finally, not the least singular feature is the extreme precocity of both forms, since bulbil-bearing ferns, almost without exception, are proliferous only on their ripe fronds, and when much further advanced in development. The formation of axillary buds of this nature is a new link between the filices and the higher forms of vegetation, as, if persistent, a shrub-like development would result.

(The plants were raised by Mr C. T. Druery, Windsor Road, Forrest Gate, Essex, and exhibited by him at the meeting of the Linnean Society, London, in November 1884.)

Sketch Notes of the Flora of Berwickshire. By CHARLES STUART, M.D., Chirnside.

(Read 12th April 1883.)

In this paper I intend to give a general sketch of the rarer plants occurring in the county of Berwick, and in doing so I shall endeavour to be as concise and practical as possible. The German Ocean forms its eastern boundary, and the rock-bound coast from Cockburnspath to Berwick-upon-Tweed is unrivalled in its bold scenery. Numerous deans open out at the sea-shore, and are all interesting botanical stations. Dunglass Dean constitutes the northern boundary of the parish of Cockburnspath, and of this part of the county and of Haddington, and is, upon the whole, richer in its flora than any of the others to be afterwards examined. *Chrysosplenium alternifolium*, *Neottia Nidus-avis*, *Vicia sylvatica*, *Pyrola media*, *Anchusa sempervirens*, *Thalictrum flavum*, *Eupatorium cannabinum*, *Melica uniflora* are a few of the flowering plants. *Scolopendrium vulgare* is growing everywhere, and is exceedingly ornamental. *Asplenium Adiantum nigrum*, *Asplenium Trichomanes*, *Polystichum lobatum*, *P. aculeatum*, *P. dilatatum*, and *Polypodium Dryopteris* characterise the ferns; mosses, such as *Hookeria lucens*, *Hypnum undulatum*, *H. alopecurum*, *Bryum hornum*, and many others, are to be found on the moist rocks. The picturesque beauty of the

locality cannot be excelled, and the ravine extends towards the hills for about two miles almost from the sea-shore, and may be taken as a type of the character of the other deans lying parallel with it and St Abb's Head. Situated two miles farther south are the Tower and Pease Deans, both excellent botanical stations, and most delightful sylvan retreats. *Polystichum angulare* is the representative plant in the Pease Dean, which was, I believe, the first known Scottish station for it. Associated with it we have *Campanula latifolia*, and many other interesting plants. On the sea-shore, at the outlet of the Pease Burn, and farther along the shore, *Thalictrum minus*, *Glaucium luteum*, *Crambe maritima* (?), *Ligustrum scoticum*, and *Pulmonaria angustifolia* (?) are to be found. *Dianthus deltoides* occurs at St Helen's Chapel, on the sea banks, with *Primula elatior*, and many orchids. The stratification of the Silurian strata is well seen in many places; for by the action of the waves the succession and position of the various strata and rock formations are laid bare. Professor Playfair, Dr Hutton, and Sir James Hall examined the geology of this district thoroughly, and the whole region may be considered geologically classical. At Siccar Point, the junction of the Old Red Sandstone with the Silurian rocks is so remarkable as to attract the attention of persons little acquainted with the science of geology; and its bold rock scenery and caves, full of stalactites, form objects of interest to the scientific observer. Passing along the coast, we arrive at the ruins of Fast Castle, built upon a peninsula of rock high above the sea, one of the most picturesque objects in the county, and from its elevated position affording a magnificent sea view in all directions. *Sedum Rhodiola* grows upon the rocks in abundance, with many ferns—*Asplenium marinum*, and *A. Adiantum nigrum*, being very abundant. *Crambe maritima* (sea-kale) formerly grew on the shore in such abundance that the neighbouring farmer was in the habit of transplanting it into his garden. *Cynoglossum officinale* also grows on the shore (not found lately). Passing by the entrance of Dulaw Dean, another excellent botanical resort, after a few miles walk along the coast, we come to the noble headland of St Abb's, with its lighthouse 300 feet above the sea, and mural precipices on all sides. St Abb's Head is a mass of

insulated trap rocks of volcanic origin, the principal of which are felspar, porphyry trap-tufa, and amygdaloid. Towards Pettycurwick, a small inlet on the other side of the valley, to the north, the Silurian rocks are again seen. The plants growing on the two sides of the valley are quite in keeping with the geological character of the ground, *Arenaria verna* growing in great profusion among the unstratified trap rocks of the head; while on the opposite side of the valley not a plant of it is to be seen. The *Hypericum humifusum*, again, is observed on the stratified rocks of the other side of the valley, only a few yards off, but never near the *Arenaria*. The banks at Coldingham Bay, about two miles farther along the coast, are covered in spring with a profusion of *Primula elatior*, *Thalictrum minus*, *Astragalus hypoglottis*, and *Orchis mascula*—sometimes with white flowers. Near Eyemouth, at Gunsgreen, *Scilla verna* still flourishes; and at Ale Mill, in the Whitfield Woods, about two miles from Eyemouth, *Corallorhiza innata*; the coral root is plentiful, growing in a poor, grey, clayey soil, and is a most interesting plant. A mile or two farther south is the picturesque fishing village of Burnmouth, with a steep ravine situated immediately behind it; here we have *Arabis hirsutus*, *Astragalus glycyphyllus*, *Viola hirta*, *Arabis thalianum*, and all along the coast splendid masses of *Vicia sylvatica*. The Silurian rocks cease as we approach Burnmouth, and the lower Carboniferous sandstone, clay ironstone and shale are met with as we approach Berwick.

Berwickshire may be divided into two parts—the higher and the lower. Lammermoor constitutes the higher part of the county, while the Merse will serve us botanically as a designation for the flat or How of Berwickshire. Among the hills, Lammerlaw reaches the height of 1500 feet; Spartleton, which is just over the boundary, is 1600; Sayerslaw, 1500; The Dirringtonlaw, 1145, and many others attain a considerable altitude. The whole region has been but imperfectly examined relative to its botany, and still affords a promising field to any scientific observer. The northern slopes of Lammermoor, which are just outside the boundary, contain deans of the most romantic character as to scenery, and are full of good plants and ferns, such as *Cystopteris fragilis*, which grows in rare beauty, with *Melica*

nutans, *Asplenium trichomanes*, *Viburnum Opulus*, *Myosotis sylvatica* var. *alba*, *Vicia sylvatica*. Some of these habitats are best reached from Dunbar or Haddington, but are situated for the most part in remote regions, and require the collector to live for a few days near the scene of his work. Specimens of *Rubus Chamæmorus*, the cloud-berry, were sent to me last summer from Byrecleugh, near Longformacus, which is a new plant for the county. *Epilobium angustifolium* and *Pyrola media* flourish on the banks of the Dye at Longformacus. On the west side of Dirringtonlaw, *Arctostaphylos Uva-ursi*, the bearberry, grows plentifully with *Vaccinium Vitis-Idæa*; the berries of the bearberry go by the name of Rapper-dandies among the country people of the district.

At Langton-lees Dean, three miles from the town of Duns, the Rev. T. Brown, a former President of the Berwickshire Naturalists' Club, had the distinguished honour of adding *Saxifraga hirculus* to the Scottish flora. This beautiful plant, by far the handsomest of our native Saxifrages, grows there still in considerable abundance, although sheep drains cut through the bog threatened at one time to destroy the station; it grows with a profusion of *Sedum anglicum* and a marsh *Spergula* (*S. nodosa*?), both very attractive plants. This dean contains many good plants,—*Campanula latifolia*, and several good mosses, which fruit there, being conspicuous. It opens into Langton Dean, which is also botanically interesting.

In the moorland part of Berwickshire, however, the locality most prolific of good plants is Gordon Moss, and we will also include Mellerstane Woods and Corsby Bog, all easily reached from Gordon station on the Berwickshire Railway. The *Linnæa borealis* station at Mellerstane Woods, about the 6th of July, when this delightful plant is in full flower, is a sight to behold. The space covered by it is eighty-four yards in circumference, and is situated in a pine wood, due south from a farm named Lightfield, in Gordon Moor. Its long silky roots penetrate into the débris of rotten bark and moss, never into any soil; and it grows here in great luxuriance, close to the ground, so close that any one might easily walk over the top of it without notice—its evergreen leaves, and flowers

in pairs, exhaling the most delicious *almondy* smell. Wherever the *Linnæa* grows, *Goodyera repens*, creeping Goodyera, a very curious orchid, is not far off. In the grand old pine woods of Glenmore, near Cairngorm, some members of the Scottish Alpine Botanical Club found the *Linnæa* growing among the heather, and on examining the ground I gathered stately specimens of the *Goodyera* close to it. The same is to be seen at Mellerstane. Where this *Linnæa* grows in the Highlands, it is generally among the heather, which hides its beauty; not so in the south. Chaillu, in his interesting book *The Land of the Midnight Sun*, describes the pleasure he felt, when travelling in Lapland, when he came upon the ground covered with the *Linnæa* and the air perfumed with its sweetness, for whether we examine the beautiful pink-spotted little bells or smell their perfume, they are equally to be desired. *Listera cordata* grows in great profusion at the east end of the Mellerstane Wood, and *Blechnum boreale* grows to a size I have never seen elsewhere, and is most ornamental. *Goodyera* is most plentiful at the east end of the *Linnæa* wood, seeming to grow on the rotten bark and débris of the pines. In Gordon bogs there is a great feast for the botanist. *Lythrum Salicaria*, purple loose strife, with large spikes of flower, is growing at the side of the moss holes; while *Stellaria glauca*, with its fine large flowers, trails over the sedges and rushes. Numerous Carices and grasses, with creeping willows, are everywhere; and on the dry banks by the side of the railway *Vicia angustifolia* (Roth.), (flowers in pairs), was discovered by Captain Norman, R.N., and myself a few years ago. The moss holes are full of good aquatics, and to do them justice would require to be carefully dredged. *Utricularias*, *Potamogetons*, and *Sparganiums* are to be obtained. But a complete list of the Gordon plants may be seen in the *Proceedings of the Berwickshire Naturalists' Club* for 1880, page 293.

The Merse, or lower part of Berwickshire, may be roughly stated as situated between the Lammermoors and the River Tweed. The county is of a beautifully undulated character, the elevations running as a rule east and west, which is well observed by the character of the roads—those running north and south being very hilly, while the east and west

roads are comparatively level and very good. The country is watered by the Tweed, Whitadder, and Blackadder, and the banks of these rivers are among our best botanising ground.

At the mouth of the Whitadder, beds of *Mentha sylvestris* occur for miles up the banks of the river. *Allium Scorodoprasum*, the sand garlic, is also plentiful at the junction of the Whitadder and Tweed, with *Scirpus maritimus*, for we have the tide affecting this part of the river. *Ranunculus arvensis* grows in the fields about this point, and is considered a rare plant in Berwickshire. *Senecio erucifolius* grows in the boundary lane between Berwick bounds and Berwickshire; *Viola hirta* and *Sisymbrium sylvestre* grow at New Mills, farther up. *Scrophularia Ehrharti* grew at one time at Edrington Mill, but has not been seen for some years. From Edrington the banks are well wooded, and many interesting plants are to be met with, the woods being carpeted with primroses and wood anemones in the spring. Hutton Bridge, designed by Sir T. Brown, here spans the river, and the scenery is very pretty, and well worth a visit. The woods are full of *Myosotis sylvatica*, *Valeriana officinalis*, *Vicia sylvatica*, primroses and anemones, *Vicia sylvatica* in great masses, where the crumbling shales give it good roothold. Proceeding up the river for less than a mile, we arrive at a green haugh where *Malva moschata alba* grows in great profusion. Farther on we come to a hanging wood, and beyond to high precipices in the red sandstone opposite Huttonhall Mill. Here grows our best Whitadder plant, the *Lathyrus sylvestris*, narrow-leaved everlasting pea; the great proportion of the plants growing on rocks, is quite inaccessible, which, in these times of wholesale extermination, is fortunate. However, the collector will obtain specimens easily, for in dry weather the seeds, and in wet the plants get dislodged from above, and, rooting into the gravel in the bed of the river, make capital specimens either to grow or preserve. I cultivate these seedling plants in the garden, where they flower and flourish freely. *Lycopsis arvensis* is growing in beds among the rocks, and *Melilotus officinalis* and *M. alba* grow also at the foot of the cliffs. Round a spring there is a patch of many species of mints, which seem to be an attraction to numbers of

bright-coloured *Chrysomelæ*, which are crawling about on these plants. A variety of plants grow on both sides of the river here besides those mentioned, especially on seams of a red hue facing Hutton Hall mill-dam. The cliffs opposite Edrington Mill now claim our notice, displaying as they do a good section of the subcarboniferous strata, with the red selenite and white gypsum showing through the shales. The beautiful moss *Hypnum commutatum*, which hangs in masses over the steep rocks, is here petrified by the trickling of the water loaded with calcareous matter percolating through them, eventually becoming as hard as possible. Fine green-coloured masses of this *Hypnum* are sometimes obtained, preserving the pectinated appearance of the moss, which are very attractive as specimens for the rock garden. For the same purpose, the red selenite and white gypsum are much sought after. Whitehall is the next part of the river bank we have to examine, which is easily known by a wooded eminence 100 feet high, coming sheer down to the river, named Steepleheugh, and well known to artists for its picturesque beauty. Under the planes at the Blue Stone ford, *Viola odorata* grows in profusion. In the woods *Chelidonium majus*, *Arum maculatum*, *Vicia glycyphyllus* (in the sand pit), *Narcissus Pseudo-Narcissus*, *N. biflorus*, *Galanthus nivalis*, &c., are to be found. This is an ancient place. The flowers of both *Narcissi* growing in the turf assume a greenish tint. In the pastures I have occasionally picked *Orchis pyramidalis*, a true limestone plant. About Allanton, near a spring, many good Carices are to be got, and *Viola odorata*, *Lysimachia Nummularia*, *Ornithogalum nutans*, &c., grow on the lower part of the Blackadder banks. *Mimulus luteus* seems quite wild on all this section of the river up to Prestonhaugh, where it grows broadcast. *Arum maculatum* in the Blannerne Woods, and *Lathræa Squamaria* at Retreat Woods, must close my list for the present of the Whitadder flora. In the summer of 1882, in a dean (Blackburn Rig) near Grant's House, on the North British Railway, I picked *Trientalis europæa*, the only station I know in the county for it, and record it here. *Pyrola media* and *Polypodium Dryopteris*, with *Melica nutans*, are also, with much that is interesting, growing there also.

APPENDIX.

Trientalis europæa.—Rawburn; Langformacus. Specimens received July 1882. Still in Coldingham Moor and moors between Penmanshiel and Old Cambus.

Mentha piperita.—Two stations for this plant near Allanton and Old Cambus Burn; frequent.

Crambe maritima, although plentiful at one time along our coast, is never seen now.

Lithospermum maritimum has also disappeared, from the shifting of the gravel banks.

Cynoglossum officinale has disappeared at Lumsden Dean.

Vaccinium Oxyccocus.—Drone Moor and the Long or Coldingham Moor.

Pyrola media.—Still frequent in fine flower at Penmanshiel Woods and connected deans.

Hieracium umbellatum.—Penmanshiel Woods.

Artemisia maritima.—Confined to one rock of Greywacke, on coast near St Helen's Church.

Utricularia minor.—Gordon Moss.

&c., &c., &c.

Note on Plant Localities in the Seaward District of Berwickshire. By the Rev. GEORGE MACFARLANE, Coldingham, Associate.

[Read 11th January 1883.]

Vicia orobus, D.C.—This plant has not been found in Berwickshire for many years. It was said to be once found at Houndwood. I have found two new stations for it on the farm of Hillend, which belongs to James S. Mack, Esq.

Silaua pratensis, Bess.—Found on the farms of Fleurs and Hallydown, between Coldingham and Eyemouth.

Adoxa Moschatellina, Linn.—Found on the farm of Bee Edge, near Coldingham.

Cerastium arvense, Linn.—On Northfield farms, and near Coldingham Loch.

Artemisia Absinthium, Linn.—Coldingham Law.

Anchusa sempervirens, Linn.—Near Reston.

Hypericum humifusum, Linn.—St Abb's Head.

Arenaria verna, Linn. Do.

Asplenium marinum, Linn. Do.

Cystopteris fragilis, Bernh. Do.