

ROYAL BOTANIC GARDEN
LIBRARY
EDINBURGH

FIS\92

GARDINER, W.

Botanical rambles in

DWEP1 aa

FI/92



covers part of v.c. 92, 90



Digitized by the Internet Archive
in 2012 with funding from
Royal Botanic Garden Edinburgh

For the Botanical Society of Edinburgh
From the author

3140



FIS

FLORA

OF TEN MILES AROUND DUNDEE;

Embracing portions of the Counties of Forfar and Perth, in a simicircle of that extent, bounded on the south by the River Tay.

VASCULARES.

ORD.	GEN.	SPEC.	ORD.	GEN.	SPEC.
Ranunculaceæ,	6	14	Vaccinææ,	1	2
Nymphæaceæ,	2	2	Ericææ,	3	4
Papaveraceæ,	1	2	Monotropeæ,	1	1
Fumariaceæ,	1	2	Illicinææ,	1	1
Cruciferae,	13	18	Jasminææ,	2	2
Recedaceæ,	1	1	Gentianææ,	3	4
Cistinææ,	1	1	Convolvulææ,	1	2
Violariææ,	1	6	Boraginææ,	7	12
Droseraceæ,	1	1	Solanææ,	1	1
Polygalææ,	1	1	Scrophularinææ,	9	18
Caryophylleæ,	11	23	Labiatae,	12	19
Linææ,	1	2	Lentibulariææ,	2	2
Malvaceæ,	1	3	Primulacææ,	5	6
Tiliacææ,	1	1	Plumbaginææ,	1	1
Hypericinéæ,	2	6	Plantaginææ,	2	5
Acerinææ,	1	1	Chenopodeæ,	4	7
Geraniaceæ,	2	9	Polygonææ,	2	14
Oxalidææ,	1	1	Empetrææ,	1	1
Leguminosææ,	13	27	Euphorbiacææ,	2	3
Rosacææ,	14	31	Urticææ,	1	2
Onagrarisææ,	1	7	Ulmacææ,	1	1
Haloragææ,	3	3	Amentacææ,	8	15
Portulacææ,	1	1	Coniferae,	3	3
Paronychiææ,	1	1	Alismacææ,	1	1
Crassulacææ,	1	3	Juncaginææ,	1	2
Grossulariææ,	1	1	Aroideææ,	1	1
Saxifragææ,	2	3	Pistiacææ,	1	3
Umbelliferææ,	19	21	Naiades,	1	3
Araliææ,	2	2	Asphodeleææ,	2	3
Caprifoliacææ,	3	3	Juncææ,	3	13
Rubiææ,	3	8	Orchidææ,	5	8
Valerianææ,	2	3	Iridææ,	1	1
Dipsacææ,	2	3	Graminææ,	29	47
Compositææ,	28	48	Cyperacææ,	5	26
Campanulacææ,	1	3			

CELLULARES.

Filices,	10	15	Hepaticææ,	4	29
Lycopodiæææ,	1	4	Lichenes,	27	81
Equisetacæææ,	1	5	Characæææ,	1	2
Musci,	28	139	Algææ,	28	52
Fungi,		19			33

78 Orders, 387 Genera, 766 Species, and numerous Varieties.

W. G. wishes it to be understood, that the above tabular view of the Dundee Flora includes only what he has personally seen up to this date; and has no doubt but that it will be much extended by farther observation, especially in the cryptogamic tribes, and particularly in the lichens and fungi.

BOTANICAL RAMBLES.

REEKY LINN, CRAIGHALL, BRAEMAR.

A June morning in the country, to one who has just escaped from the noise, and smoke, and bustle of a populous town, is a luxury indeed! It is like entering upon a new state of existence, where all is changed to purity and peace. The air one breathes is fresh, and sweet with the perfume of flowers; the verdant hue of the fields and woods invigorates and delights the eye; the ear is soothed with the happy sounds of innocence and love; and all around are thousands of blossoms arrayed in their varied robes of loveliness, to gladden the heart, and awaken its holiest thoughts and feelings; for

“ A flower is not a flower alone—
A thousand sanctities invest it;
And as they form a radiant zone,
Around its simple beauty thrown,
Their magic tints become its own,
As if their spirits had possess'd it.”

Such a delicious morning was the 24th of June; and I could have lingered by the fragrant hedge-rows, where the merry bee was sipping the honied treasures of the wild rose, to admire the beautiful structure of Flora's more common productions, and hold sweet converse with such humble gems as the daisy and the violet; but, as the purpose of my present mission was to search out her rarities, all tendency to loitering, where these were not to be found, had to be subdued.

After leaving the Railway at Newtyle, I walked across the rich *How* or *Vale* of Strathmore to the little town of Alyth, on the opposite side; near to which was picked, in shallow pools, the *Pilularia globulifera*, where I have found it for several successive seasons. Three miles beyond Alyth, I came upon that noble waterfall on the Isla called the "Reeky Linn," the chief object of this day's ramble. It is situated at the head of the Den of Airly, into which the whole waters of the Isla are precipitated in three magnificent leaps. The noise of the falling torrent is heard at some distance, and a misty vapour continually arises, like a smoke or *reek* (hence the name), caused by a jutting rock, at the base of the cliffs, obstructing the force of the waters ere they have finally reached the bottom of the dark abyss below. The rocky steeps around are bright with a gay garniture of verdure and flowers, and crowned with overshadowing trees, through which the sun's beams come wandering in search of hidden beauties. Fine walks are laid out on the southern bank, from which various views of the fall and adjacent scenery are obtained; but it is seen to most advantage from a projecting cliff a little way down the northern bank, where the eye at a glance embraces not only the whole majesty of the foaming cataract, with its surrounding rocks and woods, but also the Bridge of Craig, and the distant hills of Glen Isla, which form an appropriate background to the picture.

The elegant *Orobus sylvaticus* and *Melampyrum sylvaticum* were here in profusion, growing under the shade of the trees, but entirely confined to the northern bank. *Solidago Virgaurea* β . was plentiful on both sides of the river, close by the margin, and *Alchemilla alpina*, with *Meum athamanticum*, had left their Highland homes to dwell here. *Galium boreale* was abundant, and hosts of more common plants loaded the rocks and the banks with their flowery wealth.

In April, I visited this place, and collected nearly sixty different species of cryptogamic plants; among which were

Equisetum hyemale, *Didymodon Bruntoni*, and *flexicaulis*, *Weissia striata*, *Encalypta ciliata*, *Hedwigia cæstiva*, *Bryum marginatum*, *Trichostomum polyphyllum*, *Zygodon Mougeotii*, *Hypnum pulchellum*, *catenulatum* and *plumosum*, *Neckera crispa*, *Peltidea venosa*, *Nephroma resupinata*, and various hepaticæ, including *Jungermannia Blasia* in fructification.

The evening proved rainy; but ere then my vasculums were stored with plenty of the *Orobus* and *Melampyrum*, and I was well pleased, though my walk of seven miles to the village of Rattray was a moist one.

Next morning was as favourable as a botanist could wish. The sun shone warm and bright; the shrubs and flowers exhaled their sweetest odours; and as I entered Craighall woods, the warbling music that saluted my ear told that many a leafy recess had its feathered inhabitants, all as happy as a fine summer morning could make them.

Craighall is a very picturesque house, perched on the brink of a lofty precipice overlooking the Ericht, about two miles above Blairgowrie. The banks of the Ericht are steep and rocky, and thickly clothed with wood on both sides, all the way up to Craighall, and there the cliffs rise perpendicularly to the height of several hundred feet, forming a scene of singular grandeur. Among these woods, and the rocks that margin the river, many good plants are found. Eighteen days earlier, I gathered there the rare and graceful *Convallaria verticillata*, the two elegant Melic grasses, *Melica uniflora* and *nutans*, *Polypodium Phegopteris* and *Dryopteris*, *Rubus saxatilis*, *Mæhringia trinervis*, and several mosses, lichens, and hepaticæ. On the present visit, I picked a specimen or two of *Lychnis Viscaria* and *Neottia Nidus-Avis*, and gathered rather sparingly *Circeæ alpina*. By the river side, among the rocks, plenty of *Solidago Virgaurea* β . was rearing its racemes of golden flowers; and in moist shady crevices, the delicate *Cystopteris fragilis* spread out its

beautiful fronds. In one place, the *Hymenophyllum Wilsoni* was found, covering a small portion of the surface of a perpendicular rock, among *Jungermannia spinulosa* and creeping *Hypna*, and this is the kind of situation it is usually found in. Near it, on a wet rocky bank, grew very fine specimens of *Lycopodium selaginoides*, *Fegetella hemispherica*, and *Hypnum commutatum*. Several other good cryptogamic plants occurred among the rocks, particularly *Jungermannia pubescens*, *Encalypta ciliata*, and *Bartramia gracilis*,—the latter bearing fructification copiously, though this is esteemed rare. *Geranium sylvaticum*, *Lychnis diurna*, and *Pyrola minor*, ornamented the woods, which were in some places carpeted with strawberries and violets, and occasionally *Vicia sylvatica* and *V. cracca* festooned the shrubbery and underwood with their graceful flowers. The evening sun was fast declining, and his golden rays lighting up with a glorious lustre the green foliage of these shady retreats, ere I thought of leaving them; for,

“Where buds are fresh, and every tree
Is vocal with the notes of love,”

one does not count the moments and think them hours.

Early on the 26th, I left Rattray, and proceeded by Glen Ericht, the Black Water, Glen Shee, Glen Beg, and Glen Clunie, to the Castleton of Braemar, distant about thirty-three miles. For eighteen miles, the scenery was rich and varied, and the glens wore the cheering smile of cultivation; but, after leaving the Spittal of Glen Shee, the country became thoroughly wild and mountainous. Through the narrow and solitary Glen Beg the road ascended gradually to the top of the Cairnwell, where the occurrence of *Gnaphalium supinum*, *Saxifraga stellaris*, and other plants of a similar kind indicated a good elevation. Entering Aberdeenshire, it then descended through Glen Clunie to Castleton, where I arrived late in the evening. High up the Glen, on boggy heaths, the *Rubus Chamæmorus* was flowering beauti-

fully; but the evening breeze seemed to be amusing itself with scattering the full-blown blossoms.

I was now in Braemar—in the very bosom of the Highlands! Scotland's proudest mountains were around me, and I longed for next morning's sun to dispel the mists, that I might gaze upon their majestic forms, and

“ Breathe those airs that wander free
O'er banks of thyme and blooming heather.”

THE LINN OF CORRYMULZIE.

“ The morn is up again, the dewy morn,
With breath all incense, and with cheek all bloom,—
Laughing the clouds away with playful scorn,
And living as if earth contain'd no tomb.”

The white mists were now slowly rising up the mountainsides, disclosing the “land of brown heath” in all its glory, but still chequered here and there with fields of glittering snow, though a warm summer-morning sun was showering his rosy beams upon it. Many a grey rock was bathing itself in the orient ray, and many a bristling pine clothed the slopes of the lower hills. The bosom of the vale, through which flowed the lovely Dee, had its fields and meadows mantled with luxuriance; and the village, with its bridge across the murmuring Clunie, its mill, its inns, and its two elegant spired churches, stood forth in all the resplendence of morning.

It was such a morning as I could have wished

“ To climb
Some breezy summit's brow sublime:”

But it was yet rather early for many of the alpine plants, and I decided upon botanizing some of the lower ground first. The road up Deeside from Castleton winded beautifully

among fragrant birch-woods, in which profusion of *Vaccinium Myrtillus*, and *Vitis-Idæa*, *Arctostaphylos Uva-Ursi*, and *Empetrum nigrum* were intermingled with the heath. Here and there were scattered the starry flowers of the *Trientalis europæa*, with little clumps of *Gnaphalium dioicum* and the slender *Melampyrum pratense* β . *montanum*; and on rather dry moory spots, the *Pedicularis sylvatica* occurred, with a white corolla. The air was still and warm; the small birds vied with each other who would breathe the sweetest music; the cuckoo "sighed along the vale;" the voices of rooks came from far-off woods, softened by the distance; and ever and anon the ear caught the sound of the "river rushing o'er its pebbled bed"

"The birch-trees wept in fragrant balm,"

while the graceful squirrel gambolled among their branches; and the bee murmured from flower to flower, and luxuriated in those sunny spots where

"Heath flowers clustering wild glow with empurpled light."

Now a variegated butterfly would float past on noiseless wing; then a timid doe would peep out from the verdant covert; and at every opening among the trees, or turn of the road, glimpses of beautiful scenery would burst upon and delight the eye; so that my walk was altogether a pleasant one.

About two miles from Castleton, down the wooded side of the Carr-Hill, runs a little stream, forming near the wayside a tiny waterfall called the "Carr Linn," about which I picked *Hypnum pulchellum* and *stellatum*, *Tetraphis pellucida*, *Bryum crudum* and *ventricosum*, *Hookeria lucens*, and *Jungermannia albicans*; and the trunks of the birch-trees were abundantly invested with the wide-spreading patches of the elegant *Orthotrichum Drummondii*. Nearly two miles farther on,

"I sought a lonely, woody dell,

Where all things soft and sweet—

Birds, flowers, and trees, and running streams—

'Mid bright sunshine did meet;"

And into that dell the Linn of Corrymulzie poured its sparkling waters. A bridge spanned the stream above, and a zigzag staircase led down the rocks to the foot of the fall, which, though not of great size, was very beautiful. The rocks were everywhere profusely decorated with flowers, and green moss, and tufted ferns; and a rich diversity of trees—birch, plane, larch, laburnum, and mountain-ash—intermingling their branches and foliage, produced a most pleasing effect. The path down this delicious dell was like a little paradise: It was so cool, so verdant, so full of beauty and perfume, and the warbling melody of birds so harmoniously blended with the refreshing sound of falling waters, that one felt as if in fabled fairyland. Bright insects were flitting about through the trees, and among others I noticed one that has long been a favourite, the lovely and delicate lace-winged fly, and which recalled to memory a few lines addressed to one several years ago. Those of my kind and good-natured readers acquainted with the insect, will, I hope, attribute my introducing them here to the right motive—a desire of awakening pleasurable thoughts and associations.

TO THE LACE-WINGED FLY.

Bright fly! thou recallest the sweet days of my childhood,
 When, wandering alone through the green sunny wildwood,
 To pull the fresh cowslips all drooping in dew,
 And list to the ring-dove so plaintively coo,
 I there first beheld thee, in happy repose,—
 Thy pillow the half-open'd leaves of a rose.
 How enraptured I stood! and, in silent surprise,
 View'd thy fair pearly wings and thy bright golden eyes!
 And how with delight my young bosom did glow
 When thou mountedst aloft to the cherry-tree's bough,
 And then, in the wake of a clear sunny ray,
 Rose far in the blue sky, and vanish'd away!

And still, when I visit the woodland's green bowers,
 To quaff the rich breath of the gay summer flowers,
 And hear the sweet birds in their happiness singing,
 Till all the glad echoes with music are ringing,
 I love to behold thee on rose-blossoms sitting,
 Or under the fragrant trees merrily flitting,
 Thy beauty—the pleasure thou seem'st to inherit—
 Impart a pure ray of delight to my spirit;

For who can be sad while a creature like thee,
 With so fragile a form, yet so happy can be?
 Does He who has clothed thee in vestments so fair,
 And fed thee, and watch'd thee with tenderest care,
 Not watch over all with unwearying eye,
 And pour from a fountain that never runs dry
 His kindness unbounded on great and on small,
 And his power and his love that sustaineth them all?

Then welcome, bright fly! for a teacher thou art,
 That can win, with thy gentle persuasion, my heart:
 No anger—no threatenings—thou usest to awe me;
 But with Love's silken cord dost more easily draw me—
 To willingly offer, at Gratitude's shrine,
 The Spirit's pure praise to thy Maker and mine.

Among other plants growing in this dell were *Rubus saxatilis*, *Melica nutans*, and *uniflora Melampyrum sylvaticum*, and *pratense*, and abundance of *Epilobium angustifolium*, but not in flower. The *Melampyrum sylvaticum* had some of its flowers of a deep orange colour. *Carex pulicaris* and *pallescens* were in perfection on moist rocky banks, and I culled a specimen or two of the beautiful and apparently distinct *Luzula multiflora*. *Cystopteris fragilis* and *Asplenium viride* adorned the rocky crevices; some of the trees had their trunks clothed with richly fructified *Anomodon curtispiculum*, and *Jungermannia furcata* β . *elongata* depended in loose broad green patches from the rocks. *Bartramia Halleriana* occurred among the rocks in dense tufts, with *Weissia curvirostra*, *Hypnum pulchellum* and *stellatum*, and where water was trickling *Weissia acuta* and *Fissidens adiantoides*. There had been here primroses, cowslips, wood-roof, and wood-anemonies; but they were all past flowering, and some of the leaves of the latter were covered with *Æcidium leucospermum*. Near the foot of the dell, the barberry was flowering, and on its leaves plenty of *Æcidium Berberides*.

With a light heart and heavy vasculums, I returned from Corrymulzie when the lark was leaving his station in the blue sky, and the brilliancy of day giving place to the softness of evening.

Behind Craig Vallich's heathy brow,
 The glorious sun is setting now ;
 And Koynoch's rocky front doth gleam,
 Resplendent in his parting beam ;
 While, through the twilight groves below,
 The Dee with murmuring voice doth flow,—
 A voice so soothing and so calm,
 And bleut with evening's honied balm,
 And sighing winds, and mellow song
 Of blackbird, the green woods among,
 That one would think some happy band
 Had left a while the better land,
 To breathe, from golden harp and lute,
 A strain that might some sinner's foot
 From Evil's thorny path allure,
 And lead him to that Fountain pure,
 From whence doth ever freely flow,
 In Heaven above and earth below,
 The warmest love, the brightest joy,
 And pleasure that knows no alloy.

BEN-NA-BOURD.

“ The mountain-breeze ! the fresh—the free !
 O ! bring the arrowy breeze to me !
 Be mine, the breathing heights to stem,
 The hill's empurpling diadem—
 To seek—to meet—the rushing flow
 That thrills my heart and cools my brow ;
 And feel my bosom gladly bound,
 To catch its soul-inspiring sound.”

The second sun of July was brightening with his early beams the waters of the Dee, when I left Castleton, with a guide, for the lofty mountain-solititudes of Ben-na-Bourd. About a quarter of a mile from the village, we crossed the Dee in a boat ferried over by a picturesque-looking kilted boatman, who chained his little bark to a tree on the opposite bank. Passing the boatman's pretty cottage, we entered the fresh woods, where

“ Song, fragrance, health, ambrosiate every breeze ;”

and, after walking on for some time,

“ Beneath the umbrageous multitude of leaves,”

emerged upon the open heath, and came into Glen Candlic; up which a road for ponies has been formed by Mr Farquharson of Invercauld, the proprietor, and is continued all the way, gradually ascending, to the west shoulder of Ben-na-Bourd. In this wild and solitary Glen, plenty of deer were seen, and *Epilobium angustifolium* was not uncommon among the rocky banks of the stream. Soon after leaving Glen Candlic, we crossed a stream descending to Glen Quoich, on the banks of which *Arabis petræa* was both in flower and fruit. The ascent now became steeper, and gave ample occupation to our respiratory apparatus; the air was keener, and the sky getting somewhat overcast, threatened us with mist and rain. On the heaths, I picked *Lycopodium annotinum*, and *alpinum*, and the rocks and stones invited attention to their rich encrustation of lichens. These consisted chiefly of *Gyrophora deusta*, *cylindrica*, and *erosa*, *Cornicularia lanata* and *tristis*, with *Parmelia Fahlunensis*, and occasionally straggling over them *Alectoria jubata* β . *chalybeiformis*. But what delighted me most was the great abundance and beauty of that interesting lichen, the *Cetraria Islandica*, scattered over the heaths. It was in perfect profusion, and I picked specimens bearing apothecia in various states of development, though these were scarce compared to the abundance of the plant. Its frequent associate, the elegant *Cetraria nivalis*, was also plentiful; but in vain tuft after tuft was examined in the hope of meeting with fructification. They here differed considerably in their mode of growth, as I have seen them do in other places,—the *C. nivalis* growing in dense erect tufts, while the *C. Islandica* was loosely scattered over the ground, to which it seemed to be but slightly attached. A tuft or two of *Corinularia bicolor* were gathered, and various *Scyphophori* displayed their puzzling forms, some of which could be referred to *Scyphophorus bellidiflorus*, and others to *S. filiformis*. On the banks of a stream, before attaining the top of the moun-

tain, I found *Saxifraga stellaris*, *Tofieldia palustris*, and *Veronica alpina*, but little else in the shape of flowers occurred. *Jungermannia nemorosa* β . *purpurascens* was fruiting freely; *J. julacea*, though barren, was taller and in finer condition than I had ever seen it before; and several curious alpine forms of mosses were collected. One was a small state of *Hypnum scorpioides* of a bright yellow-green colour, another a minute state of *Bartramia fontana*, and a third *Trichostomum aciculare*, with the lower portion of the stems and leaves yellow, and the upper deep green, totally different in appearance (though agreeing in character) from the usual dark-foliaged state of the plant. The beautiful *Bryum Ludwigii* grew in dense cushion-like tufts, but without fructification.

On reaching the margin of a considerable field of snow, a little below the summit, I came upon large patches of *Polytrichum septentrionale*, and to my great joy bearing plenty of capsules! There was a drizzling rain; and the cold was so severe that my fingers were almost benumbed; but the sight of this rarity was enough to diffuse a thrill of warmth through every nerve, and, for a few minutes, the effects of the elements were entirely forgotten. I was also gratified with fine specimens of *Dicranum Starkii*, and picked up besides, while my guide laid out dinner on a snowy table, *Dicranum falcatum*, *Trichostomum microcarpum*, *Conostomum boreale*, *Polytrichum hercynicum*, and *Jungermannia scalaris*.

After dinner, we were soon on the summit, which is nearly 4000 feet above the level of the sea, and about eight miles north from Castleton. Here the mountain-breeze was certainly revelling in all its freshness, but rather too "arrowy;" the sky was too murky for allowing the eye to enjoy any extent of prospect; and the ground was too sterile to produce much of interest to the botanist. The contrast between this hard, cold, bare region of clouds, and the soft, warm luxuri-

ance of the vale we had left in the morning, was striking. We had exchanged in a few hours the genial glow and beauty of summer for the surliness of winter—the mildness of a temperate for the rigour of an arctic climate—the cheerful hum of society for the awful depth of Nature's most sacred solitude.

The scanty soil on the summit was clothed with a very short sward of *Juncus trifidus*, with here and there stunted tufts of *Luzula spicata*, and dwarf clumps of *Carex rigida*; and occasionally, spreading over the low *Trichostomæ* and *Corniculariæ*, were specimens of that var. of *Lecanora tartarca* named *Upsaliensis*, and very appropriately by Swartz *Lichen frigidus*.

We descended by the *Corry* (from *correi* in Gaelic, which means a kettle), a large hollow in the side of the mountain, surrounded by a circular range of precipices. In most cases, these *corries* have a lake in them, or a bog, where a lake has formerly been. Where the rocks are micaceous, the ravines, the steep water-courses, and shelves of the corry-rocks, are rich in alpine plants, as is the case among the Clova and Breadalbane mountains; but here, the rocks being of hard dry granite, are almost destitute of verdure, and, from their vastness and sterility, present a spectacle of singular sublimity and grandeur. At the base of these wild and wintry cliffs, vegetation began again to invite attention, and *Thalictrum alpinum* showed its small fragile flowers. *Gnaphalium supinum* was abundant, but in general not very far advanced, and in one sheltered spot small specimens of *Trollius europæus* were ornamented with their swelling globular flowers of golden hue. A tuft of *Splachnum mnioides* was met with, and a plant or two of *Bryum alpinum* in fr. upon a sunken moist stone, such as is most usually its habitat. Farther down, the *Armeria maritima* β . *alpina*, was found in flower, equalling the finest sea-gilliflowers on our coasts. On the *Vaccinium uliginosum*, a solitary blossom was here and



BOTANICAL RAMBLES

IN BRAEMAR

IN 1844;

WITH

AN APPENDIX ON FORFARSHIRE BOTANY.

BY

WILLIAM GARDINER, DUNDEE.

“O, Nature! woods, winds, music, valleys, hills,
And gushing brooks!—in you there is a voice
Of potency—an utterance which instils
Light, life, and freshness, bidding man rejoice
As with a spirit's transport: From the noise—
The hum of busy towns—to you I fly.”

DUNDEE.

PRINTED BY JAMES DUFF, No. 39 HIGH STREET.

1845.

SOC. BOT. EDIN.

P R E F A C E.

THE following pages have been written especially with the view of affording to those who have participated during the past year in the writer's distribution of botanical specimens, more information about their localities than the labels accompanying these specimens could convey. He has accordingly endeavoured to point out, in such a manner that they may be traced on an ordinary map, the various places botanically visited in the counties of Aberdeen, Perth, and Forfar; described the circumstances under which the plants were collected, and in some instances, however imperfectly, the associations which they awoke, and the impressions made on his mind by the scenery amid which they grew.

This was the primary object contemplated; but it is also hoped that these sketches, though of humble pretensions, may not prove unacceptable to the lovers of Flora generally, as a faithful record of what has been seen in several rich botanical districts of old Scotland.

Should they add to the interest of the specimens distributed, or tend to increase the information or contribute to the amusement of those who may honour them with a perusal, the aim of the writer will be fully accomplished.

Overgate, Dundee, January 20, 1845.



there met with; but, so deciduous are these, that on reaching home, scarcely any remained on the plants. The most interesting acquisition on our descent was *Azalea procumbens* in flower. This humble but pretty shrub usually grows on mountain-summits, and, flowering early, is rarely seen in that state by botanical tourists, whose peregrinations are generally made towards the end of July, or in August. Its bright rosy corolla is a perfect gem; and, to all who admire the beautiful, its contemplation must afford no small share of delight. The only other plant of interest noticed in our descent was *Betula nana*; some clumps of which were spreading over the heaths, but almost destitute of catkins.

Crossing Cairn-a-Drochel, we descended to Deeside, were ferried over the river long after twilight had departed, and reached Castleton, tolerably fatigued, late in the evening.

M O R N E.

On the 6th of July, I made an excursion to the top of Morne, a mountain which rises immediately to the westward of Castleton, but not half the height of Ben-na-Bourd, and interesting principally on account of some rare cryptogamic plants upon it. I ascended from Glen Clunie by a streamlet that formed a small rocky ravine, in which some of the more common alpine plants, such as *Saxifraga stellaris* and *Epilobium alpinum*, were plentiful. Here also the *Vaccinium Vitis Idæa* was flowering beautifully, and *Salix aurita* displayed its catkins. On marshy banks, the alpine form of *Hypnum denticulatum*, called *obtusifolium* occurred, which is very different in habit from the usual state of the plant. *Dicranum subulatum* and *Didymodon heteromallus* grew associated in great profusion on bare earthy banks; and

several curious parasitic *Fungi* were observed, particularly *Puccinia pulverulenta* on *Epilobium alpinum*, and *Uredo Filicum* on small delicate-looking fronds of *Polypodium Dryopteris*.

Before reaching the summit, the streamlet became lost, or rather was rendered subterraneous, by the accumulation of vegetation in its bed; and the only indications of its existence were little boggy hollows, with here and there small openings, within the margins of which that exquisitely-beautiful moss, the *Hypnum Silesianum*, had its dwelling-place. In the hollows, among *Sphagnum*, *Rubus Chamæmorus* was still flowering, with, very sparingly, *Cornus suecica* and *Vaccinium Oxycoccus*,—the bright flowers of the latter looking like gems set in the velvety moss.

The prospect from the summit is varied and grand,—the eye commanding the whole range of the Braemar mountains on both sides of the Dee, with the beautiful winding river, the woods, the village and castle, and the farms and cottages scattered about among the rich cultured fields and meadows of the valley. The short time I spent upon the summit did not suffice to examine all its botanical productions, and indeed one of them interested me so much as to claim a good share of that. This was our old friend the *Cetraria Islandica* (officially called the *Iceland Moss*). It is stated in the *British Flora*, that “Professor Graham was perhaps the first botanist in Britain who gathered its fructification. He met with it in August 1821 (a single specimen), near the top of a mountain called Morne, immediately to the westward of Castleton in Braemar.” I was then, botanically speaking, on classic ground: The *Cetraria* was plentiful, and my researches were rewarded with ten or twelve specimens bearing apothecia! Many of the Morne specimens were assimilated in habit to *C. nivalis*, being somewhat erect and tufted, but with narrower and more crisped-like fronds than those of Ben-na-Bourd. *Cetraria nivalis*

was also here in abundance; and I collected *Cornicularia bicolor*, *Lecanora tartarea* β ., *Sphærophoron coralloides*, *Dicranum scoparium* β . *fuscescens*, *Jungermannia Orca-densis*, *Cetraria glauca* (on the ground), and a plant or two of *Azalea procumbens*, but out of flower.

Descending in a line with Castleton, a little below the summit, I came upon abundance of *Lycopodium annotinum*; and nearly half-way down, about the boggy source of a rivulet, found what would have excited the warm enthusiasm of of any lover of cryptogamic plants,—a beautiful luxuriance of *Splachnum vasculosum*, richly covered with its elegant fructification! While gathering these, and walking home with my choice cryptogamic stores, the question often arose in my mind, why is it that so many zealous cultivators of our gentle science—so many ardent admirers of the beauties of Flora—almost totally neglect these her humbler charms? Do the cryptogamic tribes not present as much beauty of structure as that of the higher orders of plants? Or is their smallness of size the reason why they are so much overlooked? “If *size* were the touchstone of excellence and the standard of appeal, then, as has been well observed, would ‘the horse be more excellent than his rider!’” It is true they are not so conspicuous as the flowering plants, nor is half their beauty to be seen without microscopic aid; but surely this can be no serious obstacle to the lover of the beautiful, nor sufficient reason why he should deny himself the benefit of that ample fund of instructive entertainment which the benevolent Creator has prepared for him in these his minuter works.

The tiny moss whose silky verdure clothes
The time-worn rock, and whose bright capsules rise,
Like fairy urns, on stalks of golden sheen,
Demand our admiration and our praise
As much as cedar kissing the blue sky,
Or Krubul’s giant flower. God made them all,
And what *He* deigns to make should ne’er be deem’d
Unworthy of our study and our love.

CRAIG KOYNOCH AND THE LION'S FACE.

“Auld frownin’ rocks on either hand
 Uprear’d their heads to heaven,
 Like temple-pillars which the foot
 O’ Time had crush’d an’ riven.”

Craig Koynoch, or the Craig of Kenneth, is a hill rising immediately from Castleton on the east side, and is said to be so named, because in days of yore King Kenneth used to sit on its summit and view his hounds in the chace. This appears likely to be true, as the prospect of the vale beneath is extensive and beautiful. On the north-east side, overlooking the Dee, wild rocks and precipices rise to the very top, and the base of the hill is densely wooded all round. It is not of great elevation above the Dee; but then the Dee itself is here about 1100 feet higher than the sea-level. I had several rambles, or rather scrambles, on this hill, and was amply rewarded with abundance of good things. On the summit, *Carex capillaris* grows plentifully, though rather stunted, and most of its perigonia infected with a fungus, the *Uredo urceolorum*. In some moist hollows, the *Jungermannia inflata* is found covering their bottoms with dark, spreading, flaky patches. Lichens are in profusion on the exposed rocks of the summit; and the following were collected: *Cornicularia tristis* and *lanata*, both in fructification, *Gyrophora polyphylla*, and the other species before mentioned found on Ben-na-Bourd, *Lecanora tartarea*, *Lecidea sanguinaria*, *Alectoria jubata* $\beta.$, *Cetraria glauca*, *Borrera furfuracea*; *Sphærophoron coralloides*, several forms; *Scyphophorus cervicornis*, with some others; and on the ground, *Lecanora tartarea* $\beta.$, *Cornicularia aculeata*, and *Cladonia rangiferina*. Some rocks near the summit, on the south side, produced *Andræa alpina*, *rupestris*, and *Rothii*, with *Grimmia Doniana*, and *Trichostomum microcarpum*.

But the wooded rocky terraces overlooking the Dee afforded the most interesting field. Here, in the clefts and crevices of the moist shady rocks, luxuriated in all their beauty those elegant Ferns the *Polystichum Lonchitis*, *Asplenium viride*, and *Cystopteris fragilis*; while the shelves were loaded with bunches of the silvery *Alchemilla alpina*, the golden-flowered *Potentilla alpestris*, the straggling *Rubus saxatilis*, and the graceful *Pyrola secunda*, *minor*, and *media*. Here also were *Oxyria reniformis*, *Saxifraga aizoides* (with mostly a single flower), *Arabis hirsuta*, *Vicia sepium*, *Avena alpina*, *Arrhenatherum avenaceum*, and *Luzula congesta*. From many a crevice and shelf, *Hieracia* displayed their sunny flowers, particularly *Hieracium Lawsoni* Sm., and the interesting and beautiful *H. murorum* var. *maculatum*,—both affording ample illustration of the sportiveness of their tribe. A few of these variations may be mentioned. In the var. of *H. murorum*, the leaves were generally more or less spotted and clouded with purple; but in some specimens the spots were almost wanting, while in others the whole upper surface was nearly purple, and the under one deeply so. Some of them were rounded at the apex, some had a short point, and others were acuminate; and frequently the toothing extended from the base to the apex, with teeth pointing forward and retroflex on the same leaf. The heads of flowers were generally from one to four, when more than one, the stems being branched at the summit, and forming a kind of corymb. But there were departures from this; for some had stems branched from the root, and others from above it, and in one plant stem and branches bore twelve heads of flowers. The *H. Lawsoni* was also very variable, but generally had from one to six heads of flowers, and in some specimens the leaves were partially spotted and shaded with purple.

Some good cryptogamic plants also occurred among these

rocks. *Sticta scrobiculata* and *Nephroma resupinata* spread themselves out in wide patches upon the rocky walls, with dense cushioned tufts of *Grimmia torta* and *Tortula tortuosa*; and in the shady crevices, *Bartramia Halleriana*, *Didymodon capillaceus*, *Hypnum pulchellum*, and *Solorina saccata* found homes. *Cetraria sepincola* grew very sparingly on the trees, and the leaves of *Crepis paludosa* were spotted with *Æcidium compositarum*.

In the woods at the base of the cliffs were multitudes of beautiful violets, spangling with their purple glory the rich fresh verdure. They were *Viola lutea* var. *amæna*, and few of them had any intermixture of yellow. Such is not generally the case, however; for this species is as sportive in its colours as some of the *Hieracia* are in their characters. In the grassy glades of the deer-forest of Canlochen last year, as well as on the Law-hill at Dundee, I collected the following varieties.

1. *With all the petals yellow.*
2. — all the petals yellow, the two upper ones purple on the underside.
3. — all the petals yellow, the two upper ones margined with purple.
4. — the two upper petals purple, and the others yellow, margined with purple.
5. — the two upper petals purple, the lateral ones with a shade of blue, and the lower yellow.
6. — the two upper petals purple, the lateral ones blue and the lower yellow.
7. — the two upper petals purple, the others blue.
8. — all the petals purple, the lower one yellow on the underside.
9. — *all the petals deep purple.*

The "Lion's Face" is another similar rocky-fronted hill, a little farther down Deeside, and has been so named from

its cliffs having a fancied resemblance to the face of that noble animal. Indeed, viewed from Craig Koynoch, no great stretch of imagination would be required to suppose the whole hill a vast reposing petrified Lion,—a magnificent restored trophy of antediluvian organic greatness! There are walks laid out around it, which, winding among green woods, are very pleasant; and opposite to it, beyond the Dee, on a noble lawn, and surrounded with fine old trees, stands the princely mansion of Invercauld, the seat of the Farquharsons.

When the magic tints of a summer sunset light up these fair white walls, the velvety lawns, the majestic trees, the murmuring river, and all that wilderness of hill and mountain that rise around them, the picture is almost one of enchantment; and to wander through these flowery woodlands, and breathe their fresh airs, and listen to their fairy music, at that soft hour, is one of the sweetest and most heart-loving felicities that this world can afford to mortal pilgrim

The botanical productions of the Lion's Face are similar to those of Craig Koynoch; but a few additional ones were gathered. On trees, occurred *Variolaria faginea*, *Squamaria affinis*, *Lecidea sanguinaria*, and *Pterogonium filiforme*; and on an old stump that had collected a little soil, *Splachnum mnioides*. The rocks about the summit presented *Parmelia omphalodes*, *saxatilis*, and *physodes*, *Peltidea aphthosa*, and one that is supposed to be *P. malacea* of Fries, *Tortula tortuosa* in fr., *Scyphophorus filiformis* var. *macilentus*, and the various forms of *Sphærophoron coralloides* growing intermixed, bearing fructification, and maintaining their distinctive habits. The Juniper was plentiful, and *Rosa spinosissima* adorned the Lion's brow with a fragrant wreath.

GLEN CALLATER.

“Near, was the wildness of the mountain scene,
With cliffs, and crags, and precipices crown'd,
And bubbling rills and white cascades between.”

Glen Callater opens into Glen Clunie about two miles from Castleton, and winds away up among the mountains for five or six miles, having in its bosom a lovely lake upwards of a mile long, but losing half its charms for want of wood. At the head of the Glen there is a *corry* with a small lake, and vast ranges of precipitous rocks; down which, in one place, dashes a considerable mountain stream, forming the “Break-neck Waterfall.” These rocks are perhaps the finest in Braemar for the variety and abundance of their botanical treasures. I visited them on the 8th, 15th, and 19th of July, and each time obtained plenty of good plants, as well as good drenchings.

The walk from Castleton to the farm of Ahallater, at the entrance of Glen Callater, is very pleasant; for Glen Clunie, which the road skirts all the way, is agreeably diversified with wood and water, field and meadow, grazing cattle, and all the sights and sounds of rural industry. Once beyond this farm, however, there are only the clear-winding Callater, the brown heath, and the rocky mountains, with no signs of man's agency except the road, and occasionally at this season a cart or two upon it, with some merry hind driving from the far-distant mountain peat-bog the winter fuel of the denizens of the valleys. Yet, lonely and uncultivated though it is, there is a quiet pastoral charm about Glen Callater, and neither angler nor botanist has any good reason to quarrel with its seclusion.

Being desirous of reaching the head of the *corry* speedily,

and unacquainted with the nature of the ground, my guide (or rather magnum vasculum carrier) proposed leaving the Glen before reaching the lake, and ascending the mountains in a slanting direction towards the desired point. This, however, I found to be a bad arrangement; as, by the incessant climbing, one gets flagged before reaching the principal scene of action. The better way is, to walk up the Glen to its head, and descend the mountains in returning. Enough of climbing awaits one at the rocks. Near the tops of the mountains, I picked *Hieracium alpinum* varying from one to six inches high, *Oporinia autumnalis* β . *Taraxaci*, *Gnaphalium supinum*, and *Alchemilla vulgaris* β . *minor*, which is merely a stunted form of the plant.

We descended into the *corry* towards the little Loch Kalder, or Loch Ceannidin, by a steep water-course, collecting *Alopecurus alpinus* and *Phleum alpinum*, which grew close to the stream on wet rocks. Here also were *Salix hirta*, *myrsinites*, and *arenaria*,—the latter rendered beautifully conspicuous by its white silky foliage. These alpine streamlets, from their steep and rapid descent, form in their course an innumerable host of minature waterfalls and cascades, which afford to the curious eye an agreeable succession of pleasing images; and there can often be detected minute, though accurate resemblances, of some of the most celebrated cataracts. To add to their beauty, and give them additional attraction to the lover of Flora, they are decorated with sweet alpine blossoms, and an exuberance of verdure and clustering mosses. Here we found the delicate *Thalictrum alpinum*, *Veronica alpina*, *V. serpyllifolia* β . *alpina*, *Saxifraga hypnoides* with its showy corollas mirrored fantastically in the rapid stream, and *S. oppositifolia* straggling over the rocks, with its comparatively large crimson flowers nestling among the beautiful ciliated leaves. And here too was the *Cochlearia grænlandica*, awakening associations of daring arctic enterprize, and arctic scenery, snowy mountains, and frozen plains, with ice-

bergs, and Polar bears, and dancing auroras, and Esquimaux, and all the other *et ceteras* of these wintry regions, till one is called back to present realities by the cold which here chills the blood,—especially if northern breezes come hurrying up the Glen, and accompanied, as they were on this occasion, with smart showers. Summer and winter seemed blended together; for, while innumerable flowers were blooming around us, our bodies were cooled down almost to the lowest temperature. On marshy banks, the *Equisetum palustre* β . *alpinum* was more profuse of catkins than of leaves; the *Juncus triglumis* and *Tofieldia palustris* were plentiful; and upon rocky ground, *Sibbaldia procumbens*, the commemorator of the good old Sibbald, showed its humble flowers.

Skirting for a short distance the small loch, which was sleeping serenely in the bosom of its native *corry*, save now and then when it was ruffled by the breeze, or dimpled by the showers, we ascended the rocks, and botanized their lower ranges. Here

“Boon Nature scatter'd free and wild,
Each plant or flower the mountain's child.”

Salix reticulata spread out its tortuous branches over the faces of the rocky shelves, and bore profusion of catkins, both fertile and sterile. *Salix petræa* and *S. herbacea* were less plentiful. *Saussurea alpina* and *Pyrola secunda* were scarcely yet in flower; but the scented Rose-root, *Sedum Rhodiola*, displayed its cymes of yellow blossoms, and the *Silene acaulis* had its humble spreading verdant masses lavishly embellished with fine rosy-crimson flowers. Bunches of *Juncus trifidus* sprung out of the clefts; *Trollius europæus* whispered of lowland woods and their summer glories; and various *Carrices* attracted attention, particularly *Carex atrata*, *rigida* and *vaginata* of Tausch, the *C. phæostachya* of Smith. *Gnaphalium dioicum* was tall and graceful, *Luzula spicata* waved from many a jutting cliff its drooping spikes, and *Ly-*

copodium selaginoides appeared as the representative of its tribe among the floral assemblage of the corry-rocks.

Mosses here flourish in great luxuriance, and many fine specimens were obtained. Those of *Hypnum rufescens* were splendid, though without fructification, as was also *Bryum Zierii*. *Andræa alpina*, *Hedwigia æstiva*, *Trichostomum patens*, and *Encalypta ciliata* bore capsules freely; and in one place, on bare earthy ground, about an old water-course, *Polytrichum hercynicum* was in full perfection. *Grimmia spiralis* and several others were added, and we left the corry

“When evening tinged the lake’s ethereal blue.”

There is a gamekeeper’s cottage at the foot of the lake, where we refreshed; and, retracing our steps down the Glen, which is dull and dreary enough after nightfall, reached Castleton when its inhabitants were enjoying their midnight slumbers.

In my second visit, I went up the Glen all the way, taking the left-hand side of the lake, ascended by the Break-neck Fall to the higher ledges of rocks, came round the “riggin’” or crest of the mountains, and finally down their sides to the foot of the lake; which was found to be far less fatiguing than my previous trip, although more ground was gone over and less time consumed, as the village was reached at a reasonable hour in the evening.

In addition to the plants formerly noticed, I found *Potentilla alpestris*, *Habenaria viridis*, *Poa cæsia*, *Festuca ovina* α . *vivipara*, *Salix lanata* and *Croweana*, *Hieracium Lawsoni* and *Schmidtii*, and many good cryptogamics. The *Splachnum tenue* occurred, though very sparingly, on moist ground, by the side of the Callater, above the lake; and among the rocks, *Bryum elongatum* and *Wahlenbergii*, *Didymodon flexicaulis*, *Dicranum fulvellum*, *heteromalum*, and *scoparium* β . *fuscescens*, *Bartramia ithyphylla*, *Weissia crispula*, and *curvirostra*, *Polytrichum alpinum*, *Zygodon Mougeotii*, with *Hypnum pulchellum* growing

amongst it, *Jungermannia setiformis*, *albicans*, *ciliaris*, and *emarginata*; and in the crevices of the rocks, about the summit, *Ædipodium Griffithianum*, but barren.

When at the summit, I made a short detour to the stream that forms the Breakneck Fall, and several adjacent boggy sources of springs, and collected the alpine form of *Fontinalis antipyretica*, *Bryum Ludwigii*, *Hypnum stramineum*, a remarkable state of *H. palustre*, *Jungermannia julacea*, *undulata*, and a var. of *nemorosa*.

In descending, various lichens were picked from the rocks, and on the heaths were *Cladonia uncialis* β . *turgida*. *Scyphophorus gracilis*, and others. *Cetraria Islandica* was very common; some of which bore young apothecia, while others were studded with black, circular, wart-like processes bursting from the frond, and which have been thought analogous to those excrescences found on *Stereocaulons*, and considered by Fries abortive apothecia. They may, however, be some gemmiferous mode of reproduction hitherto unobserved, and deserve more attention. In the afternoon, the rain came down in torrents, the stream was speedily swollen, the road got muddy, and everything was drenched and dripping.

In my third ramble to this Glen, I was accompanied by Mr Edmondston of Shetland; and, taking the middle ledges of rocks from the Breakneck Fall westwards, we had the gratification of meeting with plenty of the rare *Carex rupestris*, and several cryptogamics not before noticed here,—as *Bartramia gracilis*, *Halleriana*, and *pomiformis* β . *major* very fine, *Weissia acuta*, *Hypnum denticulatum* β ., and *Dicranum subulatum*. Indeed, instead of two or three desultory visits of a few hours, to do the head of this Glen justice, one would require to pitch camp here for a fortnight. Between the *corry* and the head of Loch Callater were gathered fine specimens of *Stereocaulon corallinum* FRIES, *Squamaria hypnorum*, and *Lecanora pezizoides* E. BOT.

SUPPL., the *Lecidea coronata* of the BRIT. FLORA. By the side of the lake, *Pyrola media* and *Galium boreale* occurred, and on rocks at its foot a form of *Pterogonium gracile*, with something of the habit of *P. filiforme*. The Callater was margined in many places with *Oxyria reniformis*, with here and there a plant of *Hieracium Lawsoni*. The stones afforded us, besides abundance of *Gyropheræ*, *Parmeliæ*, and *Corniculariæ*, *Grimmia ovata*, *Lecanora vet-tosa*, *Isidium corallinum*, *Lecidea confluens*, and a *Lecidea* which does not appear to be described. On the old bridge across the Callater, at the foot of the Glen, we found *Encalypta streptocarpa* without capsules, and *Grimmia apocarpa*, var. *alpicola*.

The day was showery and cold; but our hearts were warm with the love of Nature—they felt in unison the potency of her charms, and, in their delightful enjoyment, physical discomfort was almost overlooked.

CAIRN-A-DROCHEL.

The hill which bears this name is opposite to Castleton, on the north side of the Dee, bounded on the east by Glen Candlic, and on the west by Glen Quoich, and may be considered one of the outworks as it were of Ben-na-Bourd. Its front is rocky and wooded, but, from a southern exposure, apparently not so well furnished with plants interesting to the botanist as he could wish. My afternoon ramble on this hill was pleasant enough, though not productive of many novelties. The woods were deliciously fresh, and the birds awoke their echoes with their soft warblings. The sky was sunny and warm, the rustics were busy below in the hay-fields, and now and then their merry laugh would come

ringing through the green shades and the sweet perfume of the hay, wafted on the wings of the gentle breeze.

I picked *Pyrola media* at the foot of the hill and near the lower summit; and in marshy places, below the highest summit, plenty of *Tofieldia palustris*, mostly in ft. About the summits, and on the western declivity, various mosses and lichens were gathered; among which may be mentioned *Andræa rupestris*, *Dicranum flexuosum* β . *nigro-viride*, *Trichostomum canescens* β . *ericoides*, *Cetraria nivalis*, *Corniculariabicolor*, and *Stereocaulon denudatum* FLÖRKE.

Descending towards evening by a stream on the west side of the woods, *Salix nitens* was found bearing plenty of catkins, the incised-leaved var. of *Carduus heterophyllus*, *Lycopodium selaginoides*, *Equisetum sylvaticum*, and, what was here to be considered a rarity, a bush of broom, waving its golden tresses o'er the stream. Although the furze and broom are common plants in most parts of Scotland, spreading their glowing mantles over our moorlands and hills, in Braemar they are almost the rarest to be met with. Wild roses were more common, scattering their balmy essences on the evening air; our own "Scottish blue-bells" chimed their fairy numbers among the blooming heather; and the little modest daisy gracefully folded up its snowy crimson-tipt petals, to shelter its bosom from the falling dews.

" Beautiful children of the glen and dell,
 The dingle deep, the muirland stretching wide,
 And of the mossy fountain's sedgy side!
 Ye o'er my heart have thrown a lovesome spell;
 And, though the worldling scorning may deride,
 I love ye all!"

BEN BECK.

Upon Ben Beck, which bounds Castleton on the south-east, I spent an hour or two very agreeably, and do not doubt but that it requires better investigation. Among birch-trees, near the foot, *Pyrola secunda* and *minor* were flowering delightfully, and the former was also met with near the top, among heath, and mostly in fruit. The *Arctostaphylos Uva-ursi* clothed the ground in many places with its trailing verdant branches and clustering berries; and by the sides of rills, masses of *Saxifraga aizoides* cheered the eye with their golden flowerage. The fragrant birches had their trunks embroidered with *Orthotrichum Drummondii*. In moist places, *Bartramia fontana* and *Bryum ventricosum* flourished; banks among the heath produced *Diphyscium foliosum*, *Jungermannia minuta*, and the small alpine form of *J. ciliaris*; while, on the rocks and stones, besides a great number of lichens and mosses already mentioned as found in other places, were *Jungermannia trilobata* β . *minor*, and very fine *Trichostomum heterostichum*.

CANLOCHEN.

“ A fairy valley far among the Hills,
 Which seem'd to hold it in their rough embrace—
 Stern Giants of the old and rugged times,
 Straining pure Beauty to their rocky breasts.
 The rugged mountain-peaks looked down in joy
 Upon its placidness, like savages
 Watching the sleep of some lone innocent.
 Sweet things were in its bosom,
 Pure as the thoughts that hallow Childhood's heart.”

My excursion, on the 22d of July, over the mountains to the famed Glen of Canlochen, will not be soon effaced from

memory ; for its pleasures were heightened by the agreeable society of Messrs H. C. Watson and T. Edmondston. Through the kindness of Mr Watson, we had the luxury of a drive up to the head of Glen Clunie, and then began our ascent of the mountains through a dense mist, and traced, by the experienced guidance of Mr W.,

“ The tangled mountain-track of many a mile.”

Before reaching the head of Canlochen, we gathered from the heaths *Cladonia vermicularis*, and a *Stereocaulon*, which turns out to be the same as one found on the Sands of Barrie, and new to Britain, the *S. tomentosum* FRIES.

Glen Isla opens into Strathmore near Alyth, and, about twenty miles up among the Grampians, terminates in two narrow branches,—that on the east side being called Glen Caness, and that on the west Glen Canlochen. Both are partially wooded, and constitute a noble deer-forest. Canlochen has steep ranges of precipices on each side, with many mountain-streams dashing down from the extensive table-lands above ; and the banks of these, as well as the clefts and shelves of the rocks, have treasured beauties and rarities that the lover of Flora can duly appreciate, and that amply reward him for the most hazardous explorations.

Our entrance was by a fresh-gushing stream, that

“ Leapt down from rock to rock
 Into that vale ; and having sunn'd itself
 Amid its beauty—as a tear might sleep
 In joy a while upon a maiden's cheek—
 It wander'd on its way.”

We here found abundance of those rare grasses, *Alopecurus alpinus* and *Phleum alpinum*, and a solitary specimen of the still rarer *Sonchus alpinus*, the root of which was carefully left. As we descended, the sun would now and then raise the fleecy curtain of mist that shrouded the Glen, and show us for an instant all its glories, as if to lure us on, and then as suddenly it was again veiled in obscurity. These “ lucid intervals,” however, became more frequent ; and by the time

we got among the rocky ledges, the mist had taken to the mountain summits, and in the afternoon finally disappeared, leaving us in the full possession of the bright and genial sunshine.

The rich assemblage of rare and interesting plants upon these rocks afforded us a delicious treat. Here the *Dryas octopetala* spread out its large showy, but fragile corollas, and the *Veronica saxatilis* was loaded with its little heaven-eyed blossoms. *Erigeron alpinus* displayed its gold and purple stars, *Cerastium alpinum* graced the rocks with its silky foliage and handsome white flowers, and bright red masses of *Lychnis diurna* and *Silene acaulis* contrasted beautifully with the surrounding luxuriance of the verdure. *Pyrola rotundifolia*, *secunda* and *minor*, were all in bloom, as were also *Potentilla alpestris*, *Saxifraga nivalis*, *Draba incana*, *Arabis hirsuta*, and *Habenaria viridis*. The flower-buds of *Saussurea alpina* were scarcely yet expanded; but many *Hieracia* disported themselves in the warm sunlight, — among which were *Hieracium Lawsoni*, *Schmidtii*, *diaphanum*, and perhaps others. Grasses and Carices were flourishing in great beauty, and we picked *Poa alpina* and *cæsia*, *Aira alpina*, *Carex atrata*, *rigida*, *capillaris*, and *vaginata*. *Salix myrsinites*, *herbacea*, and *reticulata*, were spreading over the shelves, and *Veronica officinalis* was passing into the *Allionii* of the *Brit. Flora*, or *β. glabra* of *Babington's Manual*.

On a moist, steep, rocky bank, the little rare *Gentiana nivalis* was found. Mr Watson was the first to detect it; but so sparingly did it occur, that only a specimen or two fell to the share of each of us. *Veronica serpyllifolia* *β.* was plentiful by the side of every rill, with *Saxifraga hypnoides* and *stellaris*; and *Veronica alpina* and *Epilobium alsinifolium* were not unfrequent.

Botrychium Lunaria also occurred on the rocks, and various other good cryptogamies were obtained, particularly

Hypnum rugulosum and *Pterogonium filiforme*, the latter in broad spreading patches on the face of a perpendicular rock not very easily accessible. The idea strikes one here even more forcibly than in Glen Callater, that a few hours can do but little to the thorough exploration of such a place.

On leaving the Glen, Mr Watson conducted us to an extensive bog on the table-land above, where we enjoyed a dessert worthy of the day's feast. Here grew in profusion *Carex rariflora*, *aquatilis*, *curta*, and *cæspitosa*, with many interesting mosses,—such as *Splachnum vasculosum* and *sphaericum*, *Bryum Ludwigii*, *Hypnum cordifolium* β . *purpureum*, *Fissidens adiantoides*, and curious alpine 'states' of *Hypnum filicinum*, *aduncum*, and *palustre*, and *Jungermannia nemorosa*. By its side, on moist rocks, was plenty of *Dicranum falcatum*; and in our walk across the hills to Glen Clunie, we met with several tufts of *Splachnum mnioides*, as well as other acceptable additions to our cornucopian budget.

In Glen Clunie, we gathered *Rosa Sabini* and *tomentosa*, *Hieracium prenanthoides*, and *Myosotis repens*, which was pointed out to us by Mr Watson about the margins of a small wayside rill. The evening was a mild and pleasant one, the air soft and balmy, and the mountain summits, tinged by the glorious hues of sunset, stood out in bold relief against the clear blue sky. They looked like so many mighty altars gorgeously lighted up for some great festival; and truly, before such altars, after a happy day spent with Nature and agreeable society, what soul could resist offering up its silent gratitude to that great Spirit whose essence is love, and whose abode is eternity?

GLEN QUOICH.

“In gentle sighs, the softly-whispering breeze
Salutes the flowers, and waves the trembling trees.”

On the 24th of July, I had an afternoon walk to the entrance of Glen Quoich, to see the Linn; and as linns are generally a favourite resort of Flora, I had high expectations, which were not realized. The road to it was along the north side of the Dee, skirting the foot of Cairn-a-Drochel, and partly through embowering woods full of common flowers, that after a fresh shower gave to the passing winds a sweet and grateful fragrance. I picked by the way *Gnaphalium sylvaticum*, *Gentiana campestris*, *Molinia cærulea*, *Agrostis vulgaris* γ . *pumila*, and *Rosa Sabini* β . *Doniana*. The only things found about the Linn were *Salix phillyreifolia*, and an unknown species, with *Hypnum uncinatum*, *Tetraphis pellucida*, *Bryum ventricosum*, and *crudum*.

I crossed the broad “haugh” below the farm of Allen-O-Quoich, the residence of the Earl of Fife’s factor, and, from ground that was entirely under water at the time of the great floods of 1829, culled the red-flowered variety of *Achillea Millefolium*, *Crepis paludosa*, *Hieracium Lawsoni*, and *Galium palustre* β . *Witheringii*.

On the opposite side of the Dee, which was gained by means of a boat, *Epilobium angustifolium* reared its elegant spikes of crimson flowers from the mossy rocks, and the bee murmured from bell to bell of the stately foxglove. On the trees here were *Lecanora pezizoides* and *Squamaria affinis*; and the bright blossoms of *Rosa tomentosa* were mingling their incense with the odours of the “sweet-scented birks.”

FALLS OF THE GARRAWALT, AND FOREST OF BALLOCHBOWIE.

“ Now gentle gales,
Fanning their odoriferous wings, dispense
Native perfumes, and whisper whence they stole
Those balmy spoils.”

The Garrawalt is a stream coming down from the Loch-nagar group of mountains, and falling into the Dee a mile or two below the Bridge of Invercauld, and about five or six from Castleton. The waterfalls upon it are small, but very picturesque, and derive much of their interest from the grandeur of the noble forest-scenery around. They are also easily accessible by beautiful walks winding through the forest, and may be viewed from a tastefully-ornamented rustic bridge thrown across the stream above them, or from a rustic seat on the banks below, where once, it seems, there was a “fog-house” for the accommodation of visitors.

The morning walk along Deeside from Castleton to the Ballochbowie Forest was delightful. Hay-fields, thickets of wild-roses, with banks of *Galium verum*, and “bonny wild-thyme,” were breathing their honied balm. Round the old Castle of Braemar, sheep and lambs were browsing among the myriads of buttercups and daisies that gemmed the meadows: Larks were carolling aloft in the blue expanse of heaven, and many a soft-toned voice of gladness arose from the fresh woods, whose green foliage was glistening in the rosy beams: The low silvery rippings of the Dee stole softly on the ear, with the hum of passing insects, and the whisperings of the yet drowsy breeze among the flickering leaves of the aspen: Invercauld, with its woods and lawns, calmly reflected the lovely light of morning; the majestic rocks of Craig Koynoch, the Lion’s Face, and Craig Clunie, looked down over the woodlands with bland smiles from their airy heights; and, looking back, were seen glowing on the distant

sky the lofty and rugged summits of Ben-na-Bourd and Ben Avon.

At the foot of Craig Clunie, the next rocky-fronted hill down Deeside from the Lion's Face, where vast rocky fragments were scattered about among the trees, that had probably from time to time fallen from the stupendous cliffs above, and were now mantled with verdure, I spent a few minutes very agreeably. The *Vaccinium Myrtillus* was loaded with ripe, juicy, cooling berries, and many a tall spike of *Digitalis purpurea* caught at intervals, through the green waving branches, wandering sunbeams, to heighten their purple glory. Upon the rocks, I gathered various interesting cryptogamic plants. The *Peltidea apthosa* was plentiful, and bearing apothecia. I had seen this lichen perhaps a hundred times before; but this was only the second time I had met with its fructification. It is a beautiful species, when fresh of a fine yellow green colour, but changing its hue in drying to a glaucous grey. The *Tetraphis pellucida* was here in fruit, with *Weissia striata*, *Didymodon Bruntoni*, *Andræa alpina*, *Hypnum splendens* and *loreum*, and *Dicranum scoparium* β . *fuscescens*. I also collected *Bryum androgynum* bearing numerous little heads of gemmæ, *Alectoria jubata* β ., *Parmelia lanuginosa*, and a plant which is probably *Stigonema atro-virens*.

Beyond this, a picturesque porter's lodge was passed, with a little artificial lake and cascade, artificially bordered with laurels and cypresses; and farther on, I came to what is called the "Muckle Stane o' the Clunie,"—a vast boulder by the wayside, overshadowed by two fine mountain-ashes. On this huge stone, it was curious to find nearly thirty species of plants growing, principally cryptogamic, and belonging to the genera *Anictangium*, *Dicranum*, *Trichostomum*, *Bryum*, *Hypnum*, *Jungermannia*, *Parmelia*, *Gyrophora*, *Alectoria*, *Isidium*, *Stereocaulon*, and *Sphærophoron*. Still farther down the valley, I crossed an old bridge, which yielded

Encalypta streptocarpa and *Didymodon capillaceus* β ., and about mid-day enjoyed beautiful views of Lochnagar and the valley of the Dee from the Bridge of Invercauld.

A path here breaks off through the forest to the Falls; and in a short time, I found myself amid forest scenery that I had only before dreamed of. Seated on a bank of *Calluna vulgaris* and *Vaccinium Vitis-Idæa*, I gazed in rapture at the thousands of lofty pines that rose around me, with their unencumbered stems shooting up straight as arrows to the height of 60, 80, or 90 feet, crowned with dark embowering branches, through which the now-awakened breeze roared like the waves of the troubled ocean, and the sun at times darted his searching beams, to light up the pure drooping blossoms of *Pyrola media* and other wood-loving flowers that enamelled the rich flooring of these magnificent forest sanctuaries.

I had wandered through many a wood ere now, and pried into many a sylvan nook, and I had seen isolated trees of gigantic growth not a few; but never before had my eyes beheld such a noble assemblage of mighty trees, nor my ear listened to such sublime strains of forest music! It was a scene well calculated to awaken the soul's deepest admiration, and raise its holiest thoughts to Him who had planted and reared such a glorious living temple.

Some lines of a beautiful effusion by my highly-gifted and much-lamented countryman, Robert Nicoll, here recurred forcibly to my memory; and indeed the whole poem breathes such a noble spirit, and so powerfully depicts the thoughts and feelings that fill the soul to overflowing in a scene like this, that few of my readers who have not seen it will find fault with me for transcribing it in full. Its every expression comes home to the heart of the genuine lover of Nature!

FOREST MUSINGS.

“THE green leaves waving in the morning gale—
 The little birds that mid their freshness sing—
 The wild-wood flowers so tender-eyed and pale—
 The wood-mouse sitting by the forest spring—
 The morning dew—the wild bee’s woodland hum—
 All woo my feet to Nature’s forest home.

’Tis beautiful, from some tall craggy peak,
 To watch the setting of the blessed sun—
 To mark his light grow weaker, and more weak,
 Till earth and sky be hid in twilight dun :
 ’Tis beautiful to watch the earliest ray,
 That sparkling comes across the ocean grey.

But, O ! more beautiful, more passing sweet,
 It is to wander in an hour like this—
 Where twisted branches overhead do meet,
 And gentle airs the bursting buds do kiss—
 Where forest-paths and glades, and thickets green,
 Make up, of flowers and leaves, a world serene.

To the pure heart, ’tis happiness to mark
 The tree-tops waving in the warm sunshine—
 To hear thy song, thou cloud-embosom’d lark,
 Like that of some fair spirit all divine—
 To lie upon the forest’s velvet grass,
 And watch the fearful deer in distance pass.

O ! gloriously beautiful is earth,—
 The desert wild—the mountain old and hoar—
 The craggy steep, upthrown at Nature’s birth—
 The sweeping ocean wave—the pebbled shore—
 Have much of beauty all ; but none to me
 Is like the spot where stands the forest-tree.

There I can muse, away from living men,
 Reclining peacefully on Nature’s breast,—
 The woodbird sending up its God-ward strain,
 Nursing the spirit into holy rest !
 Alone with God within HIS forest fane,
 The soul can feel that all save HIM is vain.

Here it can learn—*will* learn—to love all things
 That HE hath made—to pity and forgive
 All faults, all failings : Here the heart’s deep springs
 Are open’d up, and all on earth who live
 To me grow nearer, dearer than before —
 My brother loving I my God adore.

A deep mysterious sympathy doth bind
 The human heart to Nature's beauties all;
 We know not, guess not, of its force or kind;
 But that *it is* we know. When ill doth fall
 Upon us—when our hearts are sear'd and riven—
 We'll seek the forest land for peace and Heaven.'

My botanical collections here were but scanty, perhaps from not having time to search sufficiently; but my chief object was to obtain specimens of the truly indigenous *Pinus sylvestris*. At first, when I looked aloft at the shaggy heads of the arboreal giants, I despaired of my purpose; for it seemed, without the agility of a squirrel, next to impossible to accomplish my design. However, a favourable opportunity at last occurred near the Falls, where the lower branches of a stately tree were so near the ridge of one of the highest banks, that they could be reached, and a supply of specimens procured. A few good lichens were the only other acquisitions, and among them *Peltidea scutata*, *Lecanora pezizoides*, *Squamaria hypnorum*, *Scyphophorus cervicornis* and *filiformis* var. *macilentus*.

About the Garrawalt, the *Digitalis purpurea* was exceedingly fine, and one specimen, with a majestic spike of bells, was six feet high!

The afternoon was cloudy, with showers, but they were moderate, and only served to freshen the verdure, and fill the air with a richer perfume; and as I retraced my steps toward evening along the banks of the beautiful Dee, the sweet and healthful odours of the birch and the pine were floating around me, while, from their green branches, the glossy blackbird poured his mellow vesper-song.

BEN AVON.

“Night and gloom were gone,
And the broad sun his glory did unveil.”

And the glory of the Highland landscape was unveiled too by his lucid beams, which is not always the case in these alpine districts, for clouds and storms are there more at home than the flower-hunter could often wish; but, when a bright morning does arise, it is one of surpassing beauty and loveliness. Everything in Nature seems to rejoice: The bee hums sprightlier among the laughing flowers, the birds trill their sweet notes with more fervour, and the very leaves on the trees appear as if dancing for gladness.

The mountains this morning looked sunny and inviting, and with my guide I was early a-foot, and, after crossing the Dee and the stream of Glen Candlic, was soon brushing the dew from the heather of the Glassault,

“Free as the red deer on the hill.”

Ben Avon rises to the north east of Ben-na-Bourd, and its distance from Castleton is greater. It is said to be a few feet lower than the latter, but certainly looks the higher of the two. After a long walk over the trackless heaths, the top of Little Craigindal was gained, where *Astragalus alpinus* was tolerably abundant, both in flower and fruit, though mostly in the former state. In some places, it formed a turf mixed with *Carex rupestris*, *Gentiana campestris*, *Thalictrum alpinum*, *Armeria maritima* β . *alpina* and *Silene acaulis*. Little, as applied to this hill, is only a comparative term; for, though a great mountain mass, it is inferior in size to “Muckle Craigindal,” a vast shoulder or abutment of Ben Avon, which is separated from this hill by a deep narrow glen.

While lunching on banks of the lovely alpine *Astragalus*, a noble herd of deer were seen in the glen below, leisurely crossing the stream and ascending the opposite steep. The sight was an interesting one, and well worth a long day's journey to see.

Descending and crossing the glen, we commenced our ascent of Ben Avon by a steep water-course, where the stream formed a series of little waterfalls all the way. The rocks about these are beautifully adorned with flowers, and I collected many good things, particularly *Hieracium diaphanum*, *alpinum*, *Schmidtii*, *Lawsoni*, &c., *Cochlearia grænlandica*, *Epilobium alsinifolium*, *Botrychium Lunaria*, and, upon the sloping face of a moist rock! *Cornus suecica* in very fine condition.

On the banks of the stream, near its head, *Polytrichum septentrionale* was plentiful, but barren, as well as *Bryum Ludwiggii* and *Jungermannia julacea*. *Bartramia ithyphylla*, *Splachnum mnioides*, *Dicranum falcatum*, and *Bryum uliginosum* occurred; *Polytrichum alpinum* was in profusion, though with unripe fruit; and on rocks were many tufts of *Grimmia spiralis* and *Doniana*.

The summit of this mountain is nearly akin to that of Ben-na-Bourd in its character of bleak sterility; and, though the day was clear and sunny, the air here was very cold. The prospect, however, was vast and magnificent; and the eye wandered from mountain to mountain, and from glen to glen, with all their rocks, and streams, and forests steeped in sunlight, till it became fairly bewildered with their endless variety, and wearied with delight.

Tufts of *Luzula spicata* were scattered about, some of them not exceeding an inch and a half in height, and specimens of *Saxifraga stellaris* in flower were culled not taller than a quarter of an inch. In one place, on rocky ground, where there was moisture, I found abundance of *Aira alpina* wholly viviparous, with alpine states of *A. cæspitosa*, and

flexuosa, and *Anthoxanthum odoratum*. These were the principal flowering-plants found.

There are on the summit huge isolated masses of granite, which give it a peculiar aspect, and look like portions of the hard mountain skeleton left jutting out after the softer covering has been worn away; and even these seemed to be gradually crumbling down. I scaled them with difficulty, and found on their tops *Parmelia Fahlunensis*, *Cornicularia lanata*, *Cetraria Islandica*, and *Jungermannia ciliaris*.

On this mountain, as on Ben-na-Bourd, *Cetraria Islandica* and *nivalis* were very plentiful, and I found a specimen or two of the former in fructification. Its rocks also had their covering of various species of *Gyrophora*, *Parmelia*, *Cornicularia*, *Sphærophoron*, *Stereocaulon*, &c.; and its boggy heaths displayed their numerous blackened and fragmentary remains of the trees that in bygone ages had clothed these extensive mountain-sides with a mighty forest. Here was food for meditation, and solitude enough to nurse it; for no sound broke the stillness, save that of our own voices, and now and then the whirr of a startled muirfowl, or the sudden flight of the snowy ptarmigan.

We descended by the larger Craighindal, and through Glen Candlic, when

“Twilight grey
Had in her sober livery all things clad.”

The way seemed long in the morning; but we felt it much longer now; and by the time we arrived at Castleton way-worn and weary,

“The moon had climb’d the highest hill
Which rises o’er the source of Dee,
And, from the eastern summit, shed
Its silver light on tower and tree.”

CONCLUSION.

I made a second excursion to Canlochen before leaving Braemar; and, by devoting two days to it, the 29th and 30th of July, had hoped to be able to examine other portions of the Glen, as well as procure more specimens of *Gentiana nivalis*; but, as Burns says,

“ The best-laid schemes o’ mice and men
Gang aft a-gley; ”

and so it fared with mine. The 29th turned out cold and stormy, with a strong northerly wind. I went up Glen Callater, and ascended by Cairn Turk; on the side of which, at a spring called *Fouran Vonie*, or the Hill Well, another station was found for *Splachnum vasculosum*, where it was fruiting freely. I crossed the mountains, and entered Canlochen Glen by the eastmost stream at its head, where a profusion of *Alopecurus alpinus* and *Phleum alpinum* were gathered. About half-way down the centre stream, to which I crossed, another station for *Sonchus alpinus* was met with, but only a solitary specimen, which was beautifully in flower, and, as before, the root was left uninjured.

During that day, numerous specimens of about 30 other species, mostly noticed before, were collected; and it was reserved for the second day to have some terrible scrambling among the wildest rocks. I slept in the *shieling* down the glen at the entrance to Caness. But, when next morning came, what with the cold and fatigue of the previous day, and the hardness of our beds, equal to slaps of granite, both myself and guide felt so stiff and sore that we could scarcely walk. Headache and toothache lent their tortures; and, to complete my mortification and disappointment, scarcely had we left the *shieling* when rain began to fall, which continued till afternoon pouring in torrents, with a strong cold breeze;

so that it would have been madness to have ventured among the rocks which were intended to have been examined, under such circumstances. We ascended from the glen by the centre stream, where were abundance of *Phleum alpinum*, *Epilobium alsinifolium*, *Sibbaldia procumbens*, *Gnaphalium supinum*, &c. The ascent was steep, and difficult from the wet, and full of swollen waterfalls; and when we did reach the mountain "riggin," our long and dubious walk to Glen Clunie was through cold dense mist and drenching rain.

It may here be mentioned, that about the banks of the Clunie, near Castleton, the *Hieracium prenanthoides*, *inuloides*, and *Lawsoni* occur rather plentifully, with *Meum athamanticum*, *Carduus heterophyllus*, *Rumex aquaticus*, and *Polygonum viviparum*. The latter is also common in the woods and on the heaths, and is called by the natives *Rose-n-Darrichan*, who say that bread has been known to have been made of the viviparous bulbs.

In my journey across the mountains to Dundee, the only plants picked worthy of notice were, fine *Gyrophora pellita* and *Parmelia olivacea* plentiful on old walls in Glen Shee, and *Galeopsis versicolor* in corn-fields at the Bridge of Cally.

My readers may naturally have expected that I should have conducted them to the chief mountain in Braemar, Ben-Muick-Dhui, and I had hoped to have done so: But its distance from Castleton is upwards of twenty-five miles; and when there, the only accommodation is a cavity or hollow, covered by a huge fallen rock called the "shelter-stone;" so that, without other arrangements than I had made, little could have been done in botanizing this mountain and its neighbours, Cairntoul, Ben-a-Votrin, Ben-na-Main, and Cairngorum. I was also a good deal fatigued with the exer-

tions which had been made ; and besides, the weather was too broken for travelling among mountains such as these. It is still, however, my eager desire to explore this mighty mountain-range, the highest in Scotland ; and, should this season (1845) prove more favourable, and other circumstances permit, it would afford me much pleasure to do so, as well as to examine Lochnagar, Morven, Culbleen, the Linn of Dee, the Falls of Glen Lui and Glen Muick, and other interesting portions of this ample district.

“ O, Father, Lord!

The All-Beneficent ! I bless thy name,
That Thou hast mantled the green earth with flowers,
Linking our hearts to Nature ! * *

By the breath of flowers,
Thou callest us, from city throngs and cares,
Back to the woods, the birds, the mountain-streams,
That sing of Thee ! back to free Childhood's heart,
Fresh with the dews of tenderness !”

APPENDIX.

In presenting a brief sketch of the botany of the southern part of Forfarshire, my space will not admit of entering into details, however agreeable such a task might be; but merely to indicate the situation of the principal localities visited, and mention a few of the rarer plants they produce.

 COAST OF FORFARSHIRE.

NINEWELLS.

From the confines of the county at Invergowrie to the village of Ninewells, two miles and a half west from Dundee, the Tay is margined with a very narrow stripe of waste land that had once been covered by its waters, but which is now overgrown with *Rosa rubiginosa*, *canina*, *tomentosa*, and *spinossissima*, and a great profusion of wild plants, the most interesting of which are *Anchusa sempervirens*, and *Lithospermum officinale*. Several good mosses also occur, as *Weissia lanceolata*, *Tortula convoluta*, *Funaria Muhlenbergii*, and *Gymnostomum Heimii*.

WILL'S BRAES.

Under this name, a range of rocks extends from Ninewells to the west end of Dundee, covered with rather young wood, and bounded on the north by corn-fields, and on the south by the river Tay. They also produce abundance of plants; but

the principal rarities are, *Viola hirta*, *Geranium sanguineum*, *Astragalus glycyphyllos*, *Spiræa Filipendula*, and *Potentilla verna*. The latter occurs only in one spot, but is there abundant; and on a warm sunny day in May, when it is in full flower, nothing can be more beautiful than its exuberance of golden blossoms spangling the green slope on which it grows. *Echium vulgare*, with its spiked racemes of brilliant blue flowers, the robust and woolly-leaved *Verbascum Thapsus*, the medicinal *Agrimonia Eupatoria*, and various *Hyperica* and *Centaureæ*, with hosts of others, lend their summer beauty to the adornment of these rocks and braes.

SANDS OF BARRIE.

To the eastward of Dundee there is little of interest till reaching the Sands of Barrie, except *Sedum Anglicum* and a few other things at the HARE CRAIGS, and various maritime plants and algæ between Broughty and Monifieth. These sands extend from Monifieth to Carnoustie, about ten miles to the eastward of Dundee, and run out several miles into the Frith of Tay, their extremity in that direction being called *Buttleness*, and near to which are erected two light-houses, for the purpose of facilitating the navigation of the entrance to the river. It has long been known to botanists that these sandy downs are rich in botanical treasures, and have been rendered classic ground by the indefatigable researches of the late enthusiastic and highly-favoured disciple of Flora, George Don of Forfar; and, indeed, so interesting are its productions, both vegetable and animal, that I have thought of devoting a little pamphlet like the present to it exclusively, provided such a number of Nature's votaries aid me as defray the expenses of its printing. In this might be noticed the various species of flowering-plants, ferns, mosses, hepaticæ, lichens, algæ, fungi, zoophytes, starfishes, shells, insects, fishes, reptiles, birds, and quadrupeds, as have been hitherto observed on these sands, and in the estuary of the Tay bounding them.

Perhaps a few such local sketches, however imperfect, might ultimately form a volume not altogether devoid of interest; but of this I will leave my readers and the botanical public to be judges, and act upon their decision.

It may here be mentioned, that on these Sands are found, among multitudes of others, the following rarities,—*Carex incurva*, *Juncus Balticus*, *Scirpus pauciflorus*, *Gentiana Amarella*, *Elymus arenarius*, *Equisetum variegatum*, *Didymodon inclinatus*, *Weissia nigrita*, *Bryum trichodes*, *Hypnum abietinum* and *polymorphum*, *Stereocaulon tomentosum*, new to Britain, &c.

AUCHMITHIE.

This is a little fishing-village, three miles east from Arbroath, and its rocky bay is productive of some good plants. The rare *Asperugo procumbens* grows here, and in the caves and rocky crevices *Asplenium marinum* and *Scolopendrium vulgare*,—the fronds of the latter displaying endless varieties of form, from reniform and simply lanceolate to almost palmate. *Weissia verticillata* and *Hypnum tenellum* are also found here; and on the rocks at low water many curious algæ, as *Himantholia lorea*, *Chylocladia kaliformis*, *Ptilota plumosa* β . *capillaris*, *Gigartina plicata*, *Conferva arcta*, and many others.

The cliffs all the way from Arbroath to Montrose are of the wildest character, full of bays, and fissures, and caves, lashed by the foaming ocean, and garnished in summer with a profusion of flowers, and animated by myriads of sea-birds, forming scenery of terrific grandeur, softened by the hues of beauty. Along these rocks may be seen patches of *Silene maritima*, *Dianthus deltoides*, *Armeria maritima*, *Geranium sanguineum*, *Campanula glomerata*, *Vicia sylvatica*, *Astragalus hypoglottis* and *glycyphyllos* loaded with flowers, and numerous other blossoms of various colours enamelling their verdant summits.

At USAN, the *Ligusticum scoticum* and *Artemisia maritima* are found, and on the sea-beach the curious *Steenhammeria maritima*.

On MONTROSE LINKS, a tract similar to the Sands of Barrie, grow *Silene conica*, *Botrychium Lunaria*, and *Cerastium tetrandrum*, with various plants more common to such places.

Farther along the coast, in the county of Kincardine, are the cliffs and braes of ST CYRUS, and DEN FINELLA. Among the rocks of the former place, *Silene nutans*, *Trifolium scabrum*, *Vicia lutea* and *sylvatica*, and many other good plants, are met with; and in the latter, where there is a pretty little waterfall, *Paris quadrifolia*, *Hockeria lucens*, &c.

SIDLAW HILLS.

These hills bound the Vale of Strathmore on the south from Perth to the German Ocean; and their highest summits rise in the parishes of Auchterhouse and Tealing. Craig Owl in the latter parish is the highest summit, and is about 1600 feet above the level of the sea. To the eastward of it, on the southern slope of a lower hill, is spread out the DEER-HILL WOOD, or Hill Wood of Tealing, interesting on account of the lichens which it produces. Here I had the pleasure of discovering the true apothecia of *Alectoria jubata*, which were before unknown. And the trees also are in many places richly adorned with *Cetraria sepincola* and *glauca*, *Usnea barbata* and *florida*, *Borreria furfuracea*, *Evernia prunastri*, *Ramalina fastigiata*, and *Parmelia physodes*,—all more or less plentifully bearing fructification; and on the ground are *Jungermannia Lyoni* and *ciliaris*, *Hypnum Cris-ta-castrensis*, and *Schreberi*, *Bryum dealbatum*, and many others.

In LUMLEY WOODS, a little farther north, near a pass which winds round a deep hollow called Lumley Den, about eight miles from Dundee, very fine *Trientalis europæa* is found, as well as *Listera cordata*, and other good plants. The road which passes Lumley Den runs through the Glen of Ogilvy to Glammis, twelve miles from Dundee; on the south side of which is the wooded HUNTERS' HILL, where I collected various good mosses and lichens, particularly *Anomodon curtipendulum* in fruit, and fine *Variolaria faginea*. The DEN of GLAMMIS stretches round its western base, and is tolerably rich in cryptogamics. Among other things, occur *Bryum rostratum* and *crudum*, *Hypnum denticulatum* and *catenulatum*, *Pterogonium gracile*, *Orthotrichum pulchellum*, and *Collema nigrescens*. The *Myrrhis odorata* also scents the air with its strong but agreeable perfume.

The WHITE HILL of AUCHTERHOUSE rises to about 1400 feet, a little to the north of the village, and to the west of Craig Owl. It is somewhat peaked, and its southern side is rocky and covered with debris, whitened by *Isidium paradoxum*, the *Variolaria corallina* of Acharius,—hence its name. Its rocks are rich in mosses and lichens, producing *Andræa rupestris*, *Grimmia Doniana*, *Anictangium ciliatum*, *Trichostomum fasciculare*, *microcarpum*, and *heterostichum*, *Diphyscium foliosum*, *Zygodon Mougeotii*, *Urceolaria cinerea*, *Lecidea geographica*, *Stereocaulon denudatum*, and *corallinum*, &c. On the heaths are plenty of *Lycopodium Selago*, *alpinum*, and *clavatum*, with *Cladonia uncialis*, *Bæomyces roseus*, and *Trichostomum lanuginosum*. At the foot of the hill, on the south side, some old walls are loaded with lichens and mosses; among which I gathered *Cladonia furcata* and *rangiferina* beautifully in fructification, with *Jungermannia bidentata* and *barbata*, *Cetraria Islandica*, *Scyphophorus pyxidatus*, *cocciferus*, and *filiformis*, and many more. A short distance to the south of this, near PITPOINTIE, the *Polytrichum urnigerum*, *Orthotrichum*

rupincola, and *Parmelia pulverulenta*, are met with. Below the summit of the hill, on the western side, are several small lakes; on the marshy banks of which are found *Weissia acuta*, *Dicranum squarrosum*, and *Bartramia arcuata*; in rocky places near them, *Allosorus crispus*; and in a stream descending from them to the valley behind, *Hypnum scorpioides*, *cordifolium*, and *filicinum*, and *Jungermannia cordifolia*.

But the most interesting plant yet found on the Sidlaw Hills is the *Buxbaumia aphylla*. This little moss, so highly esteemed for its exceeding rarity, as well as its very curious structure, I had the pleasure of detecting on the northern slope of the White Hill in May 1840, and have gathered it since nine different times, and more plentifully in 1844 than on any previous occasion! It grows singly, or sometimes a few together, on the bare soil of small hollows among the heath, apparently formed by the winter snows; and, from its small size, and being occasionally associated with scattered stunted *Polytricha* and *Scyphophori*, is not readily found without the most patient and attentive scrutiny of these spots. In the same month and year that I met with it on the Sidlaw Hills, my friend, Mr Lyon of Glasgow, found it on hills near that place, and subsequently on Ben Ledi and the Campsie Hills.

A few miles to the south-west of Auchterhouse are situated the CRAIGS of LUNDIE, which I visited in September, and found productive of some good lichens, as *Sticta pulmonaria* and *scrobiculata*, *Parmelia glomulifera*, *Ramalina scopulorum*, *Lecidea erythrella*, and several others.

BALDOVAN WOODS.

The nearest of the Sidlaw Hills are between six and seven miles from Dundee; and about half-way, on the old road to Glamis, are the Baldovan Woods, on the estate of Sir John Ogilvy, Bart. of Baldovan. They are not extensive, but very interesting to the botanist, from the number of rare and beautiful plants they contain. That delicate orchideous plant, the *Listera cordata*, is here in profusion, as well as *Trollius europæus*, *Pyrola minor*, *Trientalis europæa*, and *Equisetum sylvaticum*. Various *Salices* also occur, particularly *Salix Weigeliana* and *fusca*; and there is abundance of *Vaccinium Myrtillus* and *Vitis-Idæa*, with our native heaths, and the elegant tufted fronds of *Lastræa Oreopteris*, and *dilatata*, *Lomaria Spicant*, and other ferns. *Galium saxatile* whitens some of the mossy banks, and marshy spots are adorned with *Orchis latifolia* and *maculata*. The *Hypnum Cristacastrensis* and other good mosses are found in these woods, and on the walls surrounding them various species of lichens, as *Parmelia saxatilis*, *physodes*, *parietina*, *pulverulenta*, *stellaris*, and *olivacea*, *Borrera ciliaris*, and *tenella*, *Lecanora Parella*, *Lecidea petræa*, *Isidium corallinum*, *Scyphophorus cocciferus*, &c. Various fungi are also met with; among which may be mentioned *Uredo Pyrolæ*, and *gyrosa*, *Æcidium Violæ*, *Thelephora palmata*, and *laciniata*, *Clavaria coralloides*, and *vermicularis*, *Mitrula paludosa*, and *Polyporus versicolor*, with multitudes of *Agarics* and *Boleti*.

THE DEN OF MAINS,

in the vicinity of the Old Castle of Mains, is about half-way between Dundee and Baldovan Woods, but farther east the small valley of Dighty, and only a few minutes' walk from the toll-house at Dighty Bridge, on the Forfar road.

Its rarities are *Doronicum Pardalianches*, *Adoxa moschatellina*, *Geranium phæum*, and *lucidum*, *Viola odorata*, *Polygonum Bistorta*, *Hieracium aurantiacum*, and *Rumex sanguineus*. Some of these may have been introduced, but are now thoroughly naturalized.

RESCOBIE LAKE.

This Lake, which is a beautiful sheet of water, is situated a little to the eastward of Forfar, on the line of the Arbroath and Forfar Railway, and was visited in June and August. Its banks are partly wooded and partly marshy, and offer to the botanist an ample field for research. In June, I collected there *Carex filiformis*, *teretiusecula*, *paniculata*, *curta*, *intermedia*, *Goodenovii*, and *ampullacea*, *Lysimachia thyr-siflora*, *Utricularia intermedia*, and *Salix pentandra*; with *Hypnum cuspidatum* and *cordifolium* in fruit, and the new *Bryum* lately discovered in Yorkshire by Mr Nowell, *B. mnioides* WILS. MSS. The *Nuphar lutea* was plentiful, and *Nymphæa alba*, the beautiful water-lily, was

“Crowning the depths, as with the light serene
Of a pure heart.”

In August, the *Potamogeton zosteræfolius*, *lucens*, and *pusilla*, were obtained, with *Ceratophyllum demersum*, *Sparganium natans*, *Ranunculus Lingua*, *Alisma ranunculoides*, *Cicuta virosa*, and *Salix aquatica*. *Dicranum heteromallum* and *Didymodon heteromallus* were plentiful, and there were abundance of capsules upon *Hypnum dendroides* and *Sphagnum squarrosum*. The air was filled with the perfume of *Myrica Gale*, and

“Fond Memory’s flower of azure dye,”

the lovely though humble “Forget-me-not,” was emulating

the bright tints of the heavens and the waters with its small starry blossoms.

Besides the numerous plants collected in the various localities visited by the writer of these pages in 1844, he has been indebted to the kindness of several friends for specimens, in exchange, of many rarities, to enrich his parcels. From Dr Dickie, Aberdeen, he received the new *Pottia crinita*. G. J. Lyon, Esq. of Glasgow, sent *Glyphomitrium Daviesii*, *Gymnostomum tenue*, *Hypnum flagellare*, and numerous others. J. Sidebotham, Esq. of Manchester, forwarded several of the new species of mosses; Mr Nowell a supply of *Schistostega pennata*, *Weissia trichodes*, *Bryum mnioides*, and other rare mosses from Yorkshire; and Mr Ibbotson *Hypnum nitens* from the same county. From Dr Ayres he received specimens of the new *Hysterium rubrum* and the rare *Æcidium Primulæ*. Mr Croall, Ardersier, Inverness-shire, sent from that county *Lycopodium inundatum*, *Erythræa linariifolia*, &c., and procured from its locality in Ross-shire a supply of the beautiful *Pinguicula alpina*. Messrs Bousie and Laing gathered several good plants about Kinnaird, near Brechin,—as *Galium erectum*, *Epilobium roseum*, *Corallorhiza innata*, *Phascum alternifolium*, &c. Mr Kerr of Montrose sent various coast plants; and Mr Smith gathered for him the *Moneses grandiflora* in Scone Woods, and the *Scheuchzeria palustris* from its locality near Methven. To all these he tenders his warmest acknowledgments.



TABLE

OF THE

ORDERS AND GENERA OF PLANTS DISTRIBUTED IN 1844,
TO BRITISH BOTANISTS,

BY WILLIAM GARDINER.

Vasculares.

ORD.	GEN.	ORD.	GEN.
Ranunculaceæ,.....	3	Monotropeæ,.....	1
Berberideæ,	1	Gentianeæ,	2
Nympheaceæ,	1	Boragineæ,	6
Cruciferae,.....	7	Scrophularineæ,	6
Violareæ,	1	Labiatae,	2
Droseraceæ,	1	Lentibulariæ,.....	2
Caryophylleæ,	7	Primulaceæ,	3
Linææ,	1	Plumbagineæ,.....	1
Hypericineæ,	2	Chenopodeæ,	3
Geraniaceæ,	1	Polygonææ,	3
Leguminosæ,.....	5	Empetreeæ,	1
Rosaceæ,	8	Amentaceæ,	2
Onagrariæ,.....	2	Myricææ,	1
Halorageæ,.....	1	Coniferæ,.....	2
Ceratophylleæ,	1	Alismaceæ,.....	1
Crassulaceæ,.....	2	Juncagineæ,	2
Saxifrageæ,	2	Aroideæ,	1
Umbelliferae,	7	Naiades,	1
Araliaceæ,	1	Smilaceæ,.....	1
Corneæ,	1	Melanthaceæ,.....	1
Caprifoliaceæ,	1	Juncææ,.....	2
Rubiaceæ,	1	Hydrocharideæ;	1
Compositæ,.....	12	Orchideæ,	9
Vaccineæ,.....	1	Gramineæ,	17
Ericææ,.....	4	Cyperaceæ,	4

Cellulares.

Filices,.....	12	Hepaticæ,.....	5
Lycopodiaceæ,	1	Lichenes,	29
Marsilaceæ,.....	2	Characeæ,.....	1
Equisetaceæ,.....	1	Algæ,.....	24
Musci,.....	41	Fungi,.....	12

This distribution included upwards of 20,000 specimens of numerous species and varieties, belonging to the above 277 genera, and must have tended in some degree to extend the knowledge of Scotland's botanical productions.

64054

