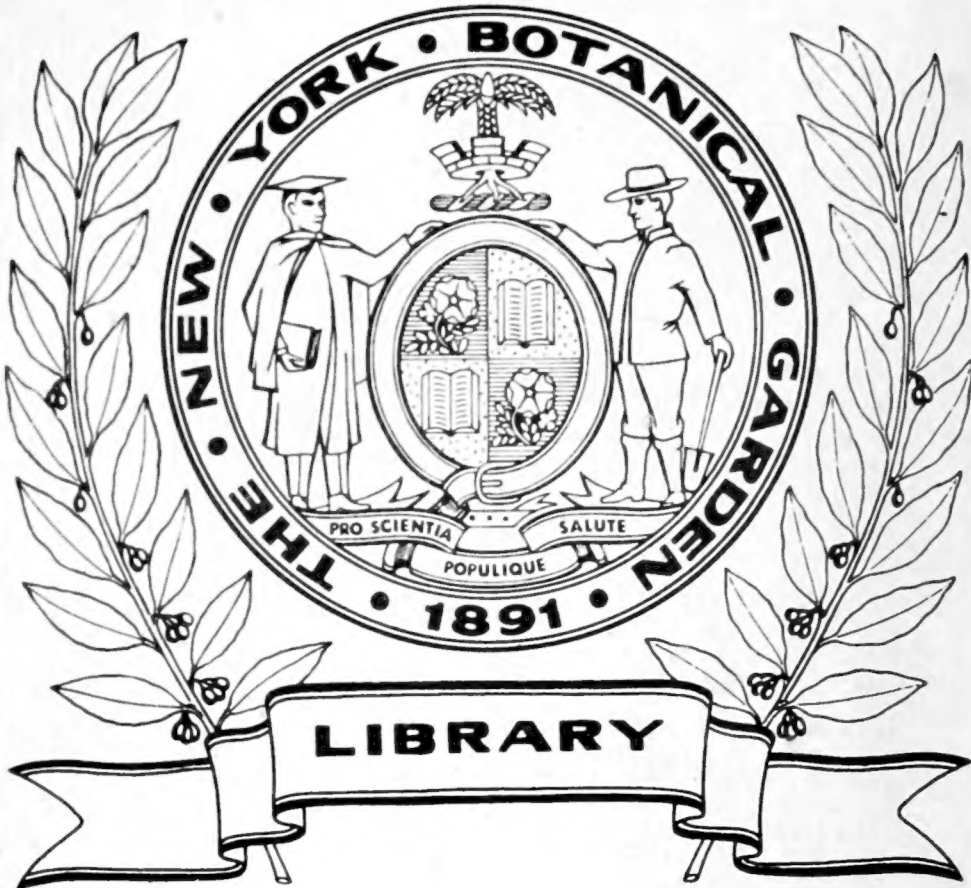


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THE FLORA OF HALIFAX

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*The vignette opposite is reproduced from the title-page of a scarce book of verse 'The Rivers and Streams of Halifax,' 1847.*

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# THE FLORA OF THE PARISH OF HALIFAX

BY WILLIAM B. CRUMP, M.A.

& CHARLES CROSSLAND, F.L.S.



HALIFAX SCIENTIFIC SOCIETY

1904

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## PREFACE.

THE Flora of a single parish, even though an extensive one, can only justify its separate existence by being something more than a mere list of species. If its treatment of the local problems of plant distribution is not sufficiently ample to afford material for wider investigations, it can at the best appeal to but a narrow circle, and remain parochial both in name and in fact. It is hoped that no such reproach can be attached to the present work. Nor is this hope grounded simply on the fact that every group of plants is enumerated, with some approach to completeness, in itself a somewhat exceptional feature; but rather on the detailed consideration of each species and the application of Watson's principles, supplemented by a description of the characteristic plant communities. In this respect, perhaps, the Flora marks an advance in methods, and by describing the salient features of the vegetation of the Parish, is more likely to be of service both to residents within its borders and to botanists concerned with geographical distribution.

Since the chapter on plant-associations was written the methods there adopted have been winning their way, and some of the "neglected problems" have already been ably investigated. But at the time the only guide available was the first paper by Robert Smith, on "Plant Associations of the Tay Basin." In attempting to apply these methods locally I was greatly assisted by Mr. C. E. Moss. The types both of woodland and moorland presented features differing in many ways from those described by Smith, and the benefit of discussion with some one who viewed the vegetation of the parish from the same standpoint, proved invaluable in determining the various plant communities that form the Flora, and the members and the conditions of existence of each. It is a pleasure to see that a botanical survey, begun in this way, has already

been extended to a much greater area in Yorkshire and elsewhere; and, indeed, the first fruits of it, the "Botanical Map of Leeds and Halifax District," by Wm. G. Smith, Ph.D., and C. E. Moss, B.Sc., provides the one feature necessary to round off the enquiry, and removes the necessity of including a similar map of the parish in this work.

The publication of the Flora was commenced as long ago as 1896. By issuing it as a separately-paged supplement to the *Halifax Naturalist*, of which it was the *raison d'être*, the financial difficulty was solved, and at the same time the lengthy period of production permitted attention to be concentrated on one portion at a time, with the hope of eventually including the cryptogamic flora. This has happily been realised, and as was anticipated, the whole responsibility for the latter has been undertaken by Mr. Crossland. His contribution far exceeds mine in number of species, and is evidence of the thoroughness with which the lower forms of vegetation have been recorded in recent years in a parish inseparably associated with some of the earliest work in this branch. The list of Fungi in particular is quite without a parallel for any equal area, and it incorporates many species previously unrecorded in any British, or even any Flora. My only share in the Flora, from the Mosses onwards, has been in seeing it through the press. So leisurely a production required care in adopting from the beginning a scheme which could be followed throughout. Of necessity abbreviations have been more freely employed in the latter part, but there is no material deviation from the original plan, and the treatment remains practically uniform.

Apart from assistance received from the Botanical Section of the Scientific Society and its individual members, and other obligations acknowledged elsewhere, I am indebted for the determination of critical species and other information to Messrs. J. G. Baker, F.R.S., W. H. Beeby, James Britten, K.S.G., Rev. W. Moyle Rogers, and Prof. R. von Wettstein.

W. B. C.



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## ERRATA.

- Page xiii., last line, for 'organic' read inorganic.
- „ xxxii., first line, delete 'and *Acetosa*.'
- „ „ line 8, delete 'groundsel.'
- „ 114, „ 13, for '**Zanichellia**' read **Zannichellia**.
- „ 149, „ 9 from bottom, for 'the Rev.' read Mr.
- „ 205, „ 21, for 1875 read 1775.
- „ 232, last line, for '**Hyalothecca**' read **Hyalotheca**.
- „ 242, line 22, for 'LEUCOSPORAÆ' read LEUCOSPORAÆ.
- „ 244, „ 31, for 'Var. **blandus**' read Var. **blandum**.
- „ 249, „ 5, after 'Tab. 2' add and 15.
- „ 249, „ 32, for '**chloropolius**' read **chloropolia**.
- „ 250, „ 1, after '**Claudopus variabilis**, Pers.' insert  
"Kebroyd, 1777—Bolton, Tab. 72, f. 2."
- „ „ „ 18, for '(Pars.)' read (Pers.)
- „ 251, „ 6 from bottom, for '**fusus**' read **fusa**.
- „ 254, „ 7, for '1760' read 1790.
- „ „ „ 38, for 'MELANOSPORAÆ' read MELANOSPORAÆ.
- „ 255, „ 31, for '**fasicularis**' read **fasciculare**.
- „ „ „ 38, for '**lachrymabundus**' read **lacrymabundum**.
- „ „ „ 42, for '**Candolleana**' read **Candolleanium**.
- „ 256, „ 13, for '**udus**' read **uda**.
- „ „ „ 39, after 'Karst' insert "Bolton, Tab. 53."
- „ 257, „ 5, for '**spinctrinus**' read **sphinctrinus**.
- „ 271, „ 2 from bottom, for '**Palocera**' read **Calocera**.
- „ 272, „ 14, for '**Poleosporium**' read **Coleosporium**.
- „ „ lines 16 and 18, for '**P**' read **C**.
- „ 283, line 19, for '**M. subhirsuta**' read **H. subhirsuta**.

## INTRODUCTION.

## CHAPTER I.

## The Parish of Halifax.

THE Parish of Halifax, situated in the West Riding of Yorkshire, is a natural geographical division, lying on the eastern slopes of the Pennine Chain, and drained by the river Calder and its tributaries. Its extreme length from west to east is sixteen miles, its breadth fourteen and a half miles, and its circumference fifty-four miles. It is one of the largest of the ancient parishes of England, and though it is no longer an ecclesiastical unit, and is divided into many and varying civil areas, its popular use has never been superseded, and the life of the parish still centres in the county borough of Halifax. It contains 129 square miles, so that it approaches Rutland, or the Isle of Wight in size. But in elevation and configuration it is entirely different. It is essentially a moorland plateau, descending eastwards, from 1500 to 500 feet in fifteen miles. As, however, it is intersected its whole length by the Calder, the moors also slope downwards to the south or the north, according as they lie north or south of the central valley. Hence the boundary of the parish forms, with certain slight exceptions, the watershed of the upper Calder.

The western boundary for its whole length of twenty miles is coincident with the county division of Lancashire and Yorkshire and with the summit ridge of the Pennine Chain. Consequently it never descends below 1200 feet, except where it meets the gap caused by the Calder, which it follows from Cornholme to Todmorden. The recognised source of the Calder at Calder Head, lies a mile and a half west of the parish boundary, and the streams descending from Summit and Walsden Moor and joining the main river at Todmorden also lie without the parish; but this is perhaps due to the Calder having at some period cut its way back beyond its natural watershed and captured the head waters of the Lancashire streams. However

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this may be, the fact that the valley at Todmorden is only 400 feet above the sea level, and at Calder Head only 750 feet, has caused it to become a natural artery for the flow of traffic between south Lancashire and the West Riding, and has largely influenced the history of the parish. This pass differs very much from the only other, but more extensive, break in the Pennine Chain, between Skipton and Settle. The valley of the Calder down to Hebden Bridge is almost a gorge, in places wholly occupied by the railway, road, river and canal, which penetrate through it. Still richly wooded, it must have been at one time, before the river was defiled and the valley blocked by mills, highly picturesque. The more ancient route across this boundary is, however, the famous pass over Blackstone Edge (1277 feet), which maintained its supremacy from Roman times to the advent of railways.

Eastward from Waystone Edge (1550 feet) the boundary is not quite so natural; the upper part of Blackburn Valley, known as Dean Head, is excluded, whilst a portion of Fixby Park, which is included in the parish, is in the basin of the Colne.

The eastern boundary, from Shelf (800 feet) to Brighouse is formed by Royds Hall Beck and Clifton Beck, and for a short distance the Calder, which finally leaves the parish at Rastrick, 170 feet above sea level.

The northern boundary from Jackson's Ridge to Queensbury descends gradually from 1500 to 1100 feet, and is almost wholly the true water parting of the Calder and Aire. Perhaps the only exception is on the northern slope of Swill Hill, which is partly included in the parish; but the area in question is only a few acres.

To understand the form of the surface of the land within the parish, it is necessary to go deeper and enquire what the rocks are, and how they are arranged.

**Geological Features.** From a botanical point of view, the geology of the district is comparatively simple, and a short survey will suffice. Further explanation and details will be found in the papers on the Physiographical Features and the Strata of the Parish, by Wm. Simpson, F.G.S., in the first volume of the *Halifax Naturalist*.

The upheaval of the Carboniferous system, which produced the Pennine anticlinal, and the subsequent denudation cause all the strata of the parish to dip in a south-easterly direction, and the oldest rocks of the series to appear at the surface in

the extreme west of the parish, and successively to pass under the outcrop of the newer and overlying members in proceeding eastwards. The dip is considerable, about one in twenty, and is accurately represented by the slope on which the greater part of Halifax is built. For in fact the eastward slope of nearly all the moors is the actual dip of the strata. As soon as the western boundary is passed, as it practically coincides with the axis of the anticlinal, the strata dip rapidly to the west, so much so that the Lower Coal Measures, which are nine miles to the east of Blackstone Edge or Widdop, reappear in Lancashire within a mile or two. Perhaps the chief botanical interest of this lies in the consequence that this western encarpment is fully exposed to the prevailing winds, which are now-a-days laden with the smoke from the south Lancashire coalfield. This has probably caused the extinction of two or three rare plants which will be mentioned later.

The river Calder, especially if we consider the Hebden and Gorple to be the main source above Hebden Bridge, instead of the stream passing through  
**Consequent Streams.** Todmorden, flows in the direction of the dip, being consequent upon the uplift of the strata. It has carved out its valley by erosion, aided by the weathering of the sides, so that above Hebden Bridge it has cut into and exposed the Yoredale rocks underlying the rocks at the surface. Its fall from Todmorden to Brighouse is tolerably uniform, and equal to not more than twelve feet per mile. This, of course, is very much less than the actual dip of the rocks, so that as it flows east it successively passes over the newer rocks. At any point in its valley, however, the strata on either side are identical, the cross section being symmetrical.

Some of the tributaries of the Calder have the same characters, flowing in the direction of the dip. This is notably the case with the Red Beck in Shibden, though its course is more southerly, as is the dip there. The upper courses of the Ryburn, the middle portions of Luddenden Brook and of the Hebble flow eastwards along the dip.

But in most cases the tributaries run at right angles to the main stream, originating subsequently along the strike of the strata. It follows therefore that a cross section  
**Subsequent Streams.** in their valleys is not symmetrical, but the strata on the western side, possessing a gentle slope, pass under those on the east, the outcrop of which forms a steep escarpment. This is best seen in the

Hebble valley at Halifax, where the grit rock forming the slope from King Cross to the brook then passes out of sight under the steep face of the coal measures of which Beacon Hill is composed.

The rocks all belong to the Carboniferous system, and are classified as Yoredale Rocks, Millstone Grits and Lower Coal Measures. The Yoredale beds composed of sandstones and shales, with thin bands of impure limestone, occupy the Calder valley from Todmorden to beyond Hebden Bridge, and the lower portions of Colden Clough, Hardcastle Crag, and Crimsworth Dean. They only rise above the valley from Todmorden to Eastwood, where they stretch across from Bridestones Moor to Langfield Edge, and then with a slight interruption, round the head of Withens Clough; there is also a small outcrop in the depression at Gorple. The only noticeable effect of the presence of these beds on the flora is on Langfield Moor, where, over the shales of which they are largely composed, heather and the heaths are entirely absent. The crumbling shales in the cloughs also favour the moisture-loving species; but it is very questionable whether there is sufficient calcareous soil below Heptonstall Eaves to connect with it the presence of *Melica nutans*, which used to grow there.

The rest of the parish, west of Ogden, Halifax and Stainland is composed entirely of the successive beds of Millstone Grit. The lowest of these, the Kinderscout Grit, forms the western escarpment and caps the moors to Hebden Bridge. The crags on the edge of the moors at Widdop, Gorple Stones, Bride Stones, Chiseley Stones and Heptonstall Eaves are of this coarse grit rock, and have been the only localities where the rare bearberry, *Arctostaphylos Uva-ursi*, has been found.

Midgley, Warley, Sowerby and Soyland moors are composed of the beds classed as Middle Grits, mainly sandstones, with shales and small bands of coal, fine clay and galliard appearing at the outcrop in the valleys. Hathershelf Scout is the only prominent scar. Eastwards the Middle Grits are succeeded by the uppermost bed, the Rough Rock, forming the slopes of Halifax, Norland and Greetland Moor, and Ovenden Township. Like the Kinderscout, it forms crags and scars at



the moor edges, as Woodhouse Scar, Greetland Edge, the Ladstone, &c.

The sandstones, shales, clays and thin coal-beds of the Lower Coal Measures occupy the rest of the parish, their western boundary being marked by the line of the escarpment from Swill Hill on the north, along the Ogden and Hebblestreams to Elland, and by the Ainleys to Stainland in the south.

### **Coal**

### **Measures.**

As these measures are capped by the sandstone known as Elland Flag, they produce but little botanical difference, though the shales are somewhat prominent on the valley slopes, as in Shibden, Sun Wood and Elland Park Wood.

The entire absence of igneous, slate or limestone rocks in the area at once limits the number of plants, and simplifies any examination of their distribution. As far as the rocks themselves have any influence, there is hardly anything to prevent a species from occurring in one part of the parish rather than another. As will be shown later the altitude has much greater effect. The grit rock is absorbent and porous but retains moisture. The shales and clays are impervious and wet; so that the whole flora is composed of moisture-loving plants, or such as are indifferent. This is exemplified in the wealth of ferns and mosses in the cloughs; but at present the environment of the plants, rather than the flora itself is under consideration.

The soils, naturally therefore, do not offer greater variety than the rocks. The prevailing type is a dark, sandy, heavy soil, always shallow, and holding a large amount

### **Soils.**

of moisture. Over the shales, chiefly on the Yoredale and Coal Measures, it becomes more argillaceous, and therefore wetter and colder, but the shales are more friable than clay, and there is very little stiff clay soil. There is also only a small extent of alluvial soil: small tracts of holme land occur near Mytholmroyd and Copley, but the river only forms a flat valley bottom of any width in the last mile or two between Elland and Brighouse, sufficient to admit of a couple of crooks in its course. A light porous, sandy soil is formed in small patches near the moors, or in the neighbourhood of bare ground where the rain washes together the particles of sand crumbling from the exposed faces of rock. There remains the peat, which attains its highest development over grit rock, so much so that it is almost restricted to this formation. Hence a large portion of the parish is covered with peat to a varying depth. As deficient in organic constituents

as it is rich in organic matter, the peat retains a large amount of moisture. The peat flora is exceedingly weak in number of species, though these are present in countless myriads.

Some further surface features of the parish remain to be noticed, especially these that have been influenced and determined by man. The plateau is deeply cut

**Form of  
Valleys.**

both by the central and lateral valleys. The hills lack ruggedness of outline and contour. They form gentle shelving slopes, often descending in terraces, caused by the alternation of sandstone and shale. The streams, at first, only make a gentle depression in the contour: so long as they remain on the moors the valleys are not cut deep, though the gradient may be considerable; but when the stream has descended to about 1,000 or 800ft., the valley alters in character and becomes what is called a clough, or, less frequently, a dean. The stream is here cutting down through the strata, which hem it in on both sides, so that it has the appearance of having cleft the rocks. This portion of the valley is generally densely wooded, the woods clothing the steep sides, but stopping short above where they take a more gentle slope, occupied by pastures and farms up to the moor edge. From 500 feet downwards the gradient becomes less and the valley broadens out somewhat, and admits of a hamlet or village, though it hardly loses its clough-like character, as the moors follow it in parallel lines to the main valley. There is no case of a tributary entering the Calder above its level and so forming a cascade, nor are there any noticeable waterfalls except at Walshaw, and Lumb Fall in Crimsworth Dean, where the stream first meets the Yoredale rocks. Though the western cloughs have been mainly considered so far, the general features of Cragg Vale, Ryburn valley, Blackburn valley, Luddenden Dean and the Hebble valley are similar. But the valley of the Red Beck flowing through Shibden to Brookfoot, and of Clifton Beck, both on the Coal Measures, are not so steep and narrow, on account of the more rapid weathering of the softer rocks out of which they are carved.

There is no natural sheet of water in the parish, and hardly a pond, so that beyond the streams and moorland bogs, the botanist is dependent upon artificial habitats

**Canals.**

for the occurrence of aquatic plants. Of these there are three: reservoirs, mill-dams and the canal. The reservoirs are numerous, but being kept clear of vegetation, they are of no importance botanically, except in so

far as their presence is affecting the drainage of the moors. But the mill-dams in the valleys, below 500 feet, as at Rishworth, Luddenden Foot, Barkisland and West Vale, shelter a group of aquatic plants which are found solely in them and the canal. The latter, in spite of its dirty state, is even more productive. The aquatic reeds, grasses and pond weeds, which flourish in stagnant or slowly moving water, are chiefly found in the reach of the Calder and Hebble Navigation, from Halifax to Salterhebble Docks, and Elland Park Wood; in Tag Lock, which is an abandoned portion between Elland and Rastrick now stocked with fish; and in the old cut at Norland, which was intended to be the course of the canal, but was abandoned for the present route, and now ends in the mill-dam at the stearine works. The banks of the Rochdale Canal from Sowerby Bridge to Todmorden are lined with similar vegetation. In view of the recent arrival and restricted area of this class of aquatics, it is worth while to record that the act to extend the navigation of the Calder to Salterhebble and Sowerby Bridge was obtained in 1758; the Rochdale Canal to Sowerby Bridge was opened in 1798, and the extension of the Calder and Hebble Navigation from Salterhebble Bridge to Bailey Hall, near to the town of Halifax was completed in 1828. Though both Bolton in 1775, Leyland in 1830, and other botanists record species from the canal at Salterhebble, the number now found, and entered in the present work, is much larger. Their names are given in the next chapter, where aquatic plants are considered.

Though it is difficult to present any tangible facts, it is quite evident that the surface of the land, and consequently the flora, is undergoing a gradual change, owing to the operations of man, quite apart from the growth of the towns. The remains of tree trunks and roots imbedded in the peat point to the conclusion that at some remote period, what is now moorland was once woodland. But coming to more recent times, it is clear that the moors are not now so extensive as they were. At present, almost all the the surface above a thousand feet, probably a third of the whole area, is moorland. But around Halifax former moorland has been drained and enclosed. Swales Moor, Illingworth Moor, Highroad Well Moor, Skircoat Moor are now only names, and the last has become Savile Park. Greenwood's map of Yorkshire, 1817, shows a Forest Dean Moor in the Blackburn Valley, south of Stainland between Firth House and

Outlane. This has all been brought under cultivation, except a patch of Outlane Moor, and with it has gone *Anagallis tenella*, the Bog Pimpernel, which grew in Stainland Dean from 1775 to 1820, or somewhat later. But all the moors west of the Hebble and Ryburn brooks are now preserved for grouse, and it is extremely probable that the practice of firing the moors periodically to encourage the growth of fresh shoots of heather and bilberry must have a detrimental influence on rarer plants associated with them. The club mosses have certainly diminished, and probably the lesser tway-blade, owing to this cultivation of heather. But the presence of reservoirs is probably the cause of the disappearance of those that affect boggy ground, for the reservoirs have certainly improved the drainage of the moors.

The land under cultivation is almost entirely pasture and meadow. Hardly any arable land is seen, except in the neighbourhood of Copley, West Vale, Elland and Lightcliffe, where barley, oats and roots are grown to a small extent; so the corn-field weeds take a very small place in the flora. The farms are small, and mainly dairy for the supply of the towns. In the neighbourhood of Queensbury and Swill Hill they ascend to 1100 and even 1200 feet, but elsewhere not higher than 1000 feet. The pastures on these moorland farms are very rough, but productive of a considerable number of plants, which are driven out of the richer fields in the valleys. The fields are invariably divided by dry stone walls, in place of hedgerows.

Park land only figures to a very small extent, chiefly in the neighbourhood of Lightcliffe (Crow Nest), Fixby, Skircoat to Warley Town (Pye Nest and Willow Hall), Sowerby (Brockwell) and Barkisland.

The woods are numerous, but somewhat small. Every valley contains some, bordering the stream or on the steeper slopes, and the western valleys around Hebden Bridge are richly wooded. In almost every case these woods appear to be the much reduced remnants of the original forest that occupied the valleys, perhaps six or eight hundred years ago. Looking down the length of the Calder valley, we find narrow strips of wood appearing on one or other side, and frequently on both together, on the steep slopes, all the way from Calder Head to Brighouse. Their distance from the river increases as we descend, and the valley broadens, but their situation is invariable.



The only interruption is between Luddenden Foot and Norland, where the valley slopes are largely occupied by Sowerby Bridge, and Allen Wood formerly occupied the site of the station there. Whilst the valley bottom has long ago been deforested, these woods have been retained because their sites were worthless for any other purpose, as will be recognised by anyone familiar with Long Wood or Woodhouse Scar in Skircoat, North Dean Wood, or Hathershelf Scout Wood. Further, the numerous "royds" of the parish are almost all situated on these same hill slopes, and are the places where the ground was cleared to make a habitation; and frequently the woods still remain surrounding the clearance, or royd as at Akroyd, Mayroyd, Fallingroyd, Binnroyd, &c. Other ancient place-names like Woodhouse and Shaw originate in the adjoining woods, and the Calder itself is the "wooded water."

The soil is too shallow and the ground too rocky to admit of a valuable growth of timber. The trees that attain the greatest dimensions appear to be the beech, ash and sycamore. The oak is very common in many woods, as North Dean and Elland Park, and though, perhaps, it offers the most prolonged resistance to unfavourable circumstances, it nowhere reaches a great size. Birch woods may be found in Luddenden Dean and Broadhead Clough, near Mytholmroyd; and pines and firs have been planted freely in the Hebden valley and Crimsworth Dean. It would seem, from the absence of early botanical records from them, that the woods around Hardcastle Craggs were not formerly as accessible to the public as they are to-day. For not only does the parish possess, for a thickly populated manufacturing district, an unusual wealth of woodland scenery, but the public are free to enter almost all the woods, and facilities are generally granted on application in the few cases where there is no right of way.

Whilst Halifax shares in the mild, equable and damp climate enjoyed by Britain as a whole in virtue of its insular position, the situation and elevation of the parish introduce local modifications, chiefly in the form of a lower average temperature and a greater rainfall.

**Climate.** The following table presents the results of two series of meteorological observations made in Halifax at different periods, setting out in each case the monthly average for a term of eight years of the adopted mean temperature, which is derived by combining the morning and afternoon readings of the dry bulb

thermometer with those of the maximum and minimum thermometers, all being in the shade. Those of earlier date have been previously published in "Eight Years' Meteorology of Halifax, being a Record of Observations taken at Well Head during the years 1866 to 1873 inclusive," by John Waterhouse, F.R.S., F.R.A.S., F.G.S., &c. The later readings are by Mr. J. Whiteley, the librarian at Belle Vue, where the corporation has maintained a meteorological station since 1892. As in neither case have the observations been continued for a sufficiently long period to arrive at a true average, it is desirable to make use of both; and as the stations differ somewhat in altitude, and yield different averages, it is undesirable to combine the readings.

MONTHLY MEAN TEMPERATURE IN THE SHADE.

	WELL HEAD, HALIFAX, 1866—1873. Altitude 526 ft.		BELLE VUE, HALIFAX, 1892—1899. Altitude 625 ft.	
January	...	37°.28 F.	...	36°.4 F.
February	...	38°.94	...	37°.0
March	...	39°.78	...	40°.0
April	...	46°.00	...	43°.9
May	...	50°.07	...	48°.1
June	...	56°.49	...	53°.9
July	...	60°.68	...	57°.0
August	...	59°.35	...	57°.7
September	...	53°.95	...	52°.7
October	...	47°.00	...	45°.7
November	...	40°.31	...	43°.0
December	...	38°.63	...	37°.4
Yearly Average		<u>47°.37</u>	..	<u>46°.1</u>
Winter Average (Dec.—Feb.)		38°.3	...	36°.9
Summer Average (June—Aug.)		58°.8	...	56°.2

The yearly average for places in Yorkshire near the sea level is 48° or 48°.5, and the local observations are in close accordance with the generally accepted conclusion of Dalton, that the mean temperature falls one degree for every hundred yards ascent above sea-level. As the elevation of the parish ranges from 200 ft. to 1500 ft., there is probably a difference of five degrees in the mean temperature of the valley bottom and the moors. If records were available they would probably show

a greater difference, for the narrow valleys and cloughs are sheltered, often wooded, and may be inclined to the south, and so gain a distinct advantage by receiving the sun's rays at a less inclination. On the other hand, the moors are exposed to the full sweep of the wind, and their slope is almost horizontal. There is, therefore, no cause for wonder that the vegetation in Elland Park Wood, which combines a south aspect with a low altitude, is always considerably in advance of that of other and less favoured parts of the parish. But more than this, the variation of five degrees is quite sufficient to produce an entire transformation of the flora: the plants that can maintain a footing at the higher elevations are not only much fewer in number but are almost all different species from those at low levels. A change of altitude affects both the mean temperature and the flora much more rapidly than does a change of latitude. Hence the parish possesses, thinly scattered on the highest moors, a few plants, like *Trientalis* and *Rubus Chamaemorus*, which the botanist will find in great profusion at low levels in Norway.

The rainfall is more variable, both from year to year and place to place, but its chief characteristic is its high average, owing to the elevation of the parish. The

**Rainfall.**      annual fall at Halifax exceeds that at Wakefield or Leeds by about ten inches, but is less, by fifteen inches, than the fall on the high moorlands of the parish. Combined with the nature of the soil, and the relatively high humidity of the air, this leads to a prevalence of moisture-loving plants in the flora, such as the sedges, ferns, and mosses; although it should not be overlooked that though the moorland plants may be almost water-logged for considerable periods of the year, they have in the summer to withstand a much severer drought than other plants which are less exposed to the sun and wind. The ease with which a moor is fired is an obvious consequence and demonstration of this fact.

The details in the table below, derived from the same sources as the previous one, illustrate the distribution of the rainfall throughout the year. The Well Head readings extend over a period of forty-five years, a sufficient period to afford a reliable average. From these it is clearly shown that the spring months (February to May) are the driest, whilst the rest show but little difference from each other, except October, which is decidedly the wettest month of the year.

## AVERAGE RAINFALL IN HALIFAX.

	Well Head (486 ft.) 1829—1873.		Belle Vue (625 ft.) 1892—1899.
January	2·921 ins.	...	2·75 ins.
February	2·341	...	2·82
March	2·266	...	2·77
April	1·987	...	2·04
May	2·036	...	1·85
June	2·896	...	2·85
July	2·811	...	2·28
August	3·101	...	2·50
September	2·931	...	2·88
October	3·633	...	4·20
November	3·044	...	2·55
December	2·722	...	3·30
	<hr/> 32·667 <hr/>		<hr/> 33·29 <hr/>

As elsewhere, the prevailing winds throughout the year come from the south-west and west; but the smaller rainfall of April and May is caused by the prevalence of north-east and east winds. This is especially the case in May, which is the only month when the wind is more frequently in the east than in the west, hence the vegetation is frequently retarded and the foliage liable to be damaged.

## ANNUAL RAINFALL ON HALIFAX MOORS.

Rain Gauge.	Altitude.	Average Fall 1895—1899.	Average Fall 1859—1898.
Widdop ...	1050 ft.	47·75 ins.	} 47·09 ins.
Walshaw Dean ...	1380 „	43·85	
Midgley Moor ...	1350 „	47·11	
Warley Moor ...	1325 „	42·91	
Ovenden Moor ...	1375 „	47·91	
Castle Carr Lodge	1060 „	39·74	
Ogden ...	990 „	43·58	
Ramsden Wood ...	815 „	36·91	

Turning to the rainfall in the parish generally, the rain gauges maintained on the gathering grounds of the reservoirs of the Halifax Corporation present a fairly complete summary of the conditions in the northern half of the parish. The average amount collected in the highest four gauges in the last



forty years is 47·09 ins. per annum, ranging from 30·45 ins. in 1887 to 63·07 ins. in 1872. Further details are shewn in the table on the previous page, compiled from tables published by James A. Paskin, M.Inst.C.E., Waterworks Engineer.

Lying on the millstone grit rocks which intervene between the coal fields of the West Riding and South Lancashire, the parish of Halifax does not possess the density of population of either area. The western townships (except near Todmorden) are very thinly populated, but the central valley is occupied by a succession of boroughs, towns and overgrown manufacturing villages. It seems but a question of time for the main road traversing it to become a continuous street, lined with buildings. The mills and hamlets have also followed the courses of the tributaries of the Calder, and one in particular, the Hebble, has become almost wholly urban in character. The population of the whole parish is approximately a quarter of a million, of which the Borough of Halifax claims a hundred thousand. This has its effect on the Flora, mainly in the direction of extermination, but to a less extent in the introduction of alien and casual plants. The seeds of these are brought in wool, corn and other merchandise, and plants alien to the British Flora spring up on the refuse and tippings in the neighbourhood of mills, malt kilns, corn mills, &c. In very few cases, perhaps in none, do these aliens naturalise themselves and become permanent, just as very few garden plants are able to hold their own in competition with the indigenous flora. Similar plants may originate in the goods' yards at the railway stations, and may flourish for a few years on the railway banks. An embankment not only furnishes an interesting object lesson in the succession of plants that occupy it for some years after it has been made, but also offers a permanent home of a peculiar character, exactly adapted to the requirements of those that eventually win the day. So it both shelters a few plants that are rare elsewhere, and allows others to spread in continuous sheets in a manner they cannot do off it. In the same way certain native plants grow rampant about the ruins of disused mills in the cloughs.

## CHAPTER II.

### Plant Distribution and Associations.

**B**EFORE passing to the consideration of the distribution of plants within the limits of the parish, it is desirable to enquire shortly where they come from, and to show that they have not all the same history, nor geographical range. To begin with, all our native plants occur not only elsewhere in England, but also on the continent; and it is from Europe, almost exclusively, that this country has received both its flora and fauna by successive immigrations, which, however, have not necessarily originated in the same quarter. Every species occupies a definite area, which may be almost world-wide, or may be a single small island. It may at any time be gradually gaining or losing ground; and it is usually most abundant at the centre, and diminishes towards the boundaries of this area. These plant areas overlap without coinciding, and produce endless combinations of species from place to place, the kaleidoscopic effect of which, in any district, is reflected in its local Flora; but it is also the function of such a work to analyse the elements of the picture, and determine the local combinations.

On examining the range of our plants outside Britain, it is possible to discover wide differences in the areas they occupy, and to group together plants of similar **Continental Range.** range, whereby they are reduced to a small number of classes, the members of each class having, undoubtedly, had a somewhat similar history and origin. The classes here adopted as the most convenient are as follows:—

(1.) **COSMOPOLITAN** species, which are found nearly all over the world, or at least, in all the continents. It is a very small class, of which the dandelion, yarrow, silver-weed, bracken, convolvulus and duck-weed will serve as examples. In part it

is composed of weeds, like the dandelion and chickweed, which have followed in the track of civilisation ; but if the review is limited to temperate regions, a considerable number of aquatic plants should also be added, for these are, undoubtedly, the most cosmopolitan in their nature, owing to their environment being the least affected by climate. On comparing the flowering plants of Halifax with those of Minnesota, U.S.A., not more than sixty or seventy are common to the two floras, and of these more than half are aquatic plants, or hydrophytes, a proportion which is greatly in excess of their relative numbers in either flora.

(2.) GERMANIC, OR ASIATIC species. The general British Flora, embracing a majority of the whole, ranges more or less over Europe and Asia, and to a less extent northern Africa. Such plants have arrived here at different times, and by different routes, from the east, but this western migration originated not in Germany, as the older name seems to imply, but in western Asia. The following cases will illustrate the varied regions now occupied by members of this family, of which the cosmopolitan species are also really members, with an exceptionally wide distribution. The Lesser Celandine is found throughout Europe and western Asia ; Ivy in western and southern Europe, northern Africa, western Asia and Japan ; Primrose in south and central Europe and northern Africa, but is absent in north-eastern Europe and Siberia ; Heather (*Calluna*) in northern and central Europe, western Siberia, Azores, Greenland, and very rarely in north-eastern America.

(3.) WESTERN and ATLANTIC species. Our two heaths, however, have a much more restricted range than the heather, and whatever their past history has been, they are now limited to western Europe, attaining their maximum development along the Atlantic coast. Other British heaths are found only in the south-west of England and in Ireland, and in the south-west of Europe. Though these are not present in this district, a few members of this very remarkable group are; notably the filmy fern (now in all probability extinct) ; the ivy-leaved hair bell (*Wahlenbergia*) ; the blue-bell, the earthnut, and the autumn Crocus, though its origin in England is problematical. Some of these certainly belong to a type which has reached the British Isles from the south, viz. the Iberian peninsula ; and they exhibit such a preference for the Atlantic border, that they are much more strongly developed in Ireland, and do not occur in the east of England at all.

(4.) ARCTIC and ALPINE species. On the contrary, about thirty-five plants of the parish have reached it from the north. Without entering into the the exact distinction between arctic and alpine plants, or their relation to the glacial epoch, it is sufficiently clear that all such plants in Britain have originated in a migration from Scandinavia, and as such species exist only at higher levels in more southern latitudes. they are commonly known as alpine or sub-alpine plants. The presence of these here is the chief positive difference between the Halifax Flora and that of the south of England. A few of them, as the bird-cherry, crowberry (*Empetrum*), cowberry (*V. Vitis-Idæa*), wood stitchwort and *Crepis paludosa*, are not uncommon in the parish; but others are the rarest gems of the flora, and attracted the attention of the earliest botanists. The bearberry (*Arctostaphylos Uva-ursi*), was first discovered in Britain in 1666 on Heptonstall Moor; the cloudberry is only found here above 1500 feet, and only extends further south to the Peak and the Welsh mountains in Britain, and northern Germany in Europe; *Trientalis* is not found in Britain, south of Halifax.

These four classes serve to indicate the relationship of British plants to those of other parts of the world. But when we come to enquire to what extent the plants of a particular locality are correlated with the flora of all Britain, a somewhat different system is more convenient, and the classification proposed by H. C. Watson, which has become generally accepted, has been adopted in the body of the Flora. Watson's names indicate in which part of the country each species is most prevalent. Plants that are found throughout the length and breadth of Britain are said to belong to the 'British type'; those which are most abundant in the south of England, and which become scarce, or are absent north of the Midlands, are of the 'English type'. Plants of the 'Intermediate type' are mainly confined to the north of England; 'Scottish' plants have their headquarters in North Britain, and the 'Highland type' in the Highlands of Scotland. The 'Atlantic type' shows a marked preference for the western coast of Britain, and the 'Germanic type' is found in the eastern counties of England; whilst a few species are too local to classify otherwise. Watson's Scottish and Highland plants correspond to the Arctic species of the previous classification; the Atlantic are common to both; but not only the Watsonian 'Germanic' type, but the British and English are Asiatic in origin.



In ascertaining to what extent each of these types is represented in the Halifax Flora, it is undesirable to deal with the whole body of plants enumerated for the parish, but to attempt to eliminate erroneous and doubtful records, alien and casual plants, and various others, by which process the list is reduced from some 760 species to about 560, the difference being mainly due to plants which are only of casual occurrence in this district, though most of them are more truly native elsewhere in England. The residue represents much more truly the proper flora of the parish, though in addition to native plants, it includes denizens and colonists, as well as a small number, possibly or certainly, now extinct. The following table presents a summary of this reduced flora, analysed according to Watson's classification, and compared with that of Great Britain. The numbers make no claim to exactitude; there are too many dubious points to admit of a rigid comparison, but without laying too great a stress on the precise figures arrived at, the conclusions to be drawn from them are unaffected thereby, and are of considerable importance.

## ANALYSIS OF TYPES OF FLORA.

TYPE.	DISTRICT	GREAT BRITAIN*		PARISH OF HALIFAX		
		No.	Per cent.	No.	Per cent.	Per cent. of British.
British ...	All	532	37·3	425	75·6	80·0
English ...	S.	409	28·7	88	15·6	21·5
Intermediate	Mid.	37	2·6	5	0·9	13·5
Scottish ...	N.	81	5·6	27	4·8	33·3
Highland ...	N.	120	8·4	7	1·2	5·8
Germanic ...	S.E.	127	9·0	2	0·3	1·5
Atlantic ...	S.W.	70	4·9	6	1·0	8·6
Local ...		49	3·4	2	0·3	4·0
Total...		1425	99·9	562	99·7	39·4

\* According to J. G. Baker in "Flora of the English Lake District."

This analysis shows us that the Halifax flora contains four-fifths of the plants of British type, that are found generally distributed in Britain in suitable localities, and this class is so dominant as to form three-quarters of the local flora. On the other hand, only one-fifth of the plants of English type are found here, and though they numerically rank second, it is *longo intervallo*, and they are relatively not so well represented as the Scottish plants. The weakness of the English type is

due much more to the elevation of the parish, rather than to its latitude, and many of this type are confined here to the lowest part of the parish, as is shown later. Nor is the tenure of a considerable proportion of them secure, even there. For not only are they liable to be disturbed by the growth of the towns, but many of them, the weeds of cultivated and waste ground, are sometimes hardly to be distinguished from casual introductions. This is borne out by the fact that the list of casuals, so far excluded from consideration, is exceptionally rich in plants of English type, the aggregate being half as large again as the number admitted into the table.

The plants of Scottish type rank third in number, but occupy a much more important position than in the flora of Britain as a whole. Excluding from consideration such Highland plants as are confined to the lofty mountains of Scotland, the flora of Halifax, in the relative strength of species of Intermediate, Scottish and Highland type, shows a much greater resemblance to that of North Britain than of the South of England. This might be expected from the situation of the parish on a chain of hills, practically continuous into Scotland, but disappearing southwards in Derbyshire.

The Germanic type may be said to be conspicuous by its absence, though casuals of this type are sometimes introduced with grain. But the moist, sheltered cloughs in the western part of the parish are certainly suitable habitats for plants of the Atlantic type, as shown by the presence of *Cotyledon* (perhaps introduced), *Hymenophyllum* (extinct), and *Wahlenbergia*, and emphasised by the discovery, by Mr. Needham in 1896, of a typical Atlantic-type hepatic, *Jubula Hutchinsiae*, near Hardcastle Crag.

The last deduction to be drawn from this analysis of the types of plants represented here, and it is only derived from an examination of the individuals composing the classes, is that whatever plants have become, or are in danger of becoming, extinct, do not belong to the British type, but rather to the others. This is perhaps due to the fact that the plants of the other types are frequently not present in large numbers individually, though of course, in many cases they are abundant enough. And though some of these rarest ones still grow in the exact localities from which they were first recorded, such changes as have taken place are in the direction of the diminution of every one of the other types, (unless it be the Intermediate,) and the supremacy of the British type.

Having now sketched the external relationships of the plants of the parish, it remains to consider their internal distribution and to distinguish the plant societies

**Lowland Division.** which are most characteristic of the district. It has already been stated that altitude is the most important factor in the problem, and the 500 feet contour line, perhaps, makes the most natural division between the lowland area in the east of the parish and the much more extensive upland area. Though it is not convenient to adhere closely to this division, its existence cannot fail to strike anyone who is familiar with the flora of the parish. The lowland division can claim three plant societies, which, as such are entirely absent in the higher area, though a few of the individuals may rise above 500 feet. These are the still-water aquatic plants: the colonists, denizens and casuals of arable and waste ground, which include most of the species of annual duration only; and a group of woodland and hedgerow plants, viz.: *Ranunculus auricomus*, *Sisymbrium Alliaria*, *Acer campestre*, *Rosa arvensis*, *Galium Cruciata*, *Convolvulus sepium*, *Solanum Dulcamara*, *Linaria vulgaris*, *Stachys Betonica*, *Lamium Galeobdolon*, *Tamus communis*, *Arum maculatum* and *Carex pendula*. The plant associations of the woods and cloughs are so interwoven, that it will be better to put them by themselves, especially so, as they form the transition from the lowlands to the uplands, and appertain to both, and lead us naturally to the flora of the hill-side pasture, and to the various types of moorland.

The mill-dams and the canal (including Tag Lock and the Old Cut at Norland) are the only stagnant, or slowly-moving waters in the parish, in which all the principal adaptations of hydrophytic plants to their aquatic environment may be observed. Using the word 'pond' for these areas as it suggests the exact conditions that prevail, the pond vegetation forms a number of communities, distributed in irregular zones in reference to the bank. Proceeding from the deeper water to the edge we meet in turn:

A.—FREE FLOATING PLANTS. In addition to the Algæ and Desmids, which are excluded from our enquiry, the only phanerogam that maintains itself without any attachment to the soil, and is a prominent feature in the "pond," is the duckweed, *Lemna minor*; but *L. trisulca* and *Ceratophyllum demersum* occur in the canal at Salterhebble.

B.—ATTACHED SUBMERGED PLANTS. These are rooted to the bottom of the pond, often in deep water, and grow up to the surface, but hardly rise above it. All the species enumerated are in the canal between Halifax and Salterhebble; the Canadian pondweed and one or two species of *Potamogeton* are found in the other localities, but the water starwort has a very much wider range as a mud or swamp plant.

<i>Myriophyllum alterniflorum,</i>	<i>Potamogeton crispus,</i>
<i>Callitriche stagnalis,</i>	<i>P. obtusifolius,</i>
<i>Elodea canadensis,</i>	<i>P. pusillus,</i>
<i>Zannichellia palustris,</i>	<i>P. pectinatus.</i>

C.—ATTACHED FLOATING PLANTS. Considerable areas of Tag Lock are covered with the floating leaves of *Polygonum amphibium* and *Potamogeton natans*, with their flowering spikes rising above the surface. The arrowhead, *Sagittaria sagittifolia*, is found in the canal. But the floating grass, *Glyceria fluitans*, though it has its place in this group, differs in being more widely diffused, and in being more characteristic of the margin.

D.—REED SWAMP PLANTS. Towards the bank, where the depth of water may vary considerably from time to time, occur a number of tall, reed-like, or strap-shaped plants. Their social character is strongly marked, owing to their creeping root-stocks, and from the same cause they fringe the shore, and by retaining the mud, they largely contribute to the silting up of the "pond," and, at the same time, push out further into it. By no means all of them grow together in the same locality: in one dam it may be bur-reed and flag; in another, reedmace and water plantain; or a fringe of tall grasses along the canal bank; but each in its turn occupies the position characteristic of the group, the members of which are:

<i>Iris Pseudacorus,</i>	<i>Acorus Calamus,</i>
<i>Typha latifolia,</i>	<i>Alisma Plantago,</i>
<i>Sparganium ramosum,</i>	<i>Phalaris arundinacea,</i>
<i>S. simplex,</i>	<i>Glyceria aquatica.</i>

E.—MARGINAL PLANTS. There are several points of interest in connection with all the preceding hydrophytes. The first is that, with a few exceptions, they have entered into the flora of the parish only since the making of the canal, as mentioned on p. xv. Nor do they appear to have displaced other water-loving species. The only such that have become extinct are *Hippuris vulgaris* and *Typha angustifolia*. Further, again with one or two exceptions, they are monocotyledons



and are confined to low levels, not ascending above 500 feet. But on the margin of these "ponds," on the land side of the reed-swamp, in the wet places between it and the rising bank, is a society of moisture-loving plants which are by no means exclusively confined to this particular habitat, but are many of them found in the cloughs and elsewhere. However, those with the more restricted distribution are distinguished by an asterisk (\*) in the following list.

<i>Ranunculus Flammula,</i>	<i>Stachys palustris,</i>
<i>R. repens,</i>	<i>Salix viminalis,</i>
<i>Caltha palustris,</i>	<i>Juncus bufonius,</i>
* <i>Nasturtium amphibium,</i>	<i>J. effusus,</i>
<i>Spiræa Ulmaria,</i>	* <i>Eleocharis acicularis,</i>
* <i>Epilobium hirsutum,</i>	<i>E. palustris,</i>
<i>Ænanthe Coccata,</i>	<i>Carex remota,</i>
<i>Angelica sylvestris,</i>	<i>C. ovalis,</i>
<i>Galium Witheringii,</i>	<i>Deschampsia cæspitosa,</i>
<i>Valeriana sambucifolia,</i>	<i>Holcus lanatus,</i>
* <i>Bidens tripartita,</i>	<i>Arrhenatherum avenaceum</i>
<i>Cnicus palustris,</i>	<i>Poa pratensis,</i>
* <i>Lysimachia vulgaris,</i>	<i>Equisetum arvense,</i>
<i>Scrophularia nodosa,</i>	<i>E. palustre,</i>
* <i>Lycopus europæus,</i>	<i>E. limosum.</i>
* <i>Scutellaria galericulata,</i>	

Other societies of aquatic or marsh plants will be considered when the cloughs and moors are examined.

The flora of Halifax contains rather more than a hundred species of annual duration only, and most of them are limited to the lowland district, constituting the weeds of cultivated and waste ground. As there is but a very small proportion of land brought under the plough, the list of arable weeds is a short one, even when it is reinforced by the more productive market gardens. But what are cornfield weeds in other parts of England frequently occur here casually on tips and waste ground, especially in the neighbourhood of corn mills and malt kilns, where they are associated with strangers to the British flora, the seeds of which have been imported in corn from southern Europe or America. Sterne Mill, which was till recently a corn mill, and Elland, where there are malt kilns by the canal, are frequently mentioned as the source of such

species in recent years. Wool and cotton also contribute their share of introductions, the neighbourhood of Wheatley being prolific a few years ago; and Gibson clearly found Hangingroyd Mill, Hebden Bridge, a similar, happy, hunting ground. When due allowance has been made for these influences, though, perhaps, fifty colonists might pass muster, very few of them are of frequent occurrence. Amongst them should be placed charlock, the field pansies, corn spurrey, *Gnaphalium uliginosum*, chamomile, species of sowthistle and speedwell, and *Polygonum Persicaria*. The more familiar poppy, shepherd's needle, fool's parsley, corn marigold, cornflower, &c., are decidedly scarce.

The denizens of waste ground are largely drawn from the orders *Cruciferae*, *Leguminosae*, *Umbelliferae*, *Compositae*, *Chenopodiaceae* and *Polygonaceae*, and need not detain us further.

### **Railway Banks.**

But the somewhat similar problem of railway banks deserves more lengthy notice. The older embankments, on which by the lapse of years the vegetation has reached a stage of equilibrium, present an aspect tolerably like that of the surrounding country. They differ chiefly in the obtrusive abundance of the dominant species. Whilst an old, undisturbed pasture is distinguished by the variety and number of its species, the older embankment exhibits the supremacy of a few, which differ entirely from those present at an earlier stage in its history. The grasses of the older banks are mainly *Deschampsia flexuosa* and *Holcus mollis*, and the Hawkweed *Hieracium boreale* is particularly abundant. Willow, broom, brambles, wood-sage and *Heracleum* are conspicuous, and a number of other species contribute in a less degree.

Two concrete examples will illustrate the history of the earlier stages. The first, the embankment adjoining Wyke Station, which was examined by Mr. C. E. Moss this summer (1900), has evidently been made a number of years, but has not quite attained the last stage described above, beyond which there is, as yet, no progress. The second, a level stretch of newly made embankment mostly formed within the last year or two for sidings at Hipperholme station, was gone over by the two of us jointly. At Wyke thirty species were noticed. In the following list of them, those that also occurred at Hipperholme are distinguished by an asterisk. It will be observed that here the typical railway-bank hawkweed had already asserted itself, and as four species of grasses were also abundant, the evolution

of the flora had clearly reached an advanced stage. The presence of the bluebell and one or two others is due to the proximity of woods, and is somewhat exceptional.

(i.)—Abundant, or dominant species :—

* <i>Hieracium boreale</i> ,	<i>Deschampsia flexuosa</i> ,
* <i>Lotus corniculatus</i> ,	* <i>Poa pratensis</i> ,
* <i>Plantago lanceolata</i> ,	* <i>Festuca duriuscula</i> ,
	<i>Trisetum flavescens</i> .

(ii.)—Fairly common, or frequent :—

<i>Solidago Virgaurea</i> ,	* <i>Dactylis glomerata</i> ,
* <i>Teucrium Scorodonia</i> ,	* <i>Trifolium pratense</i> ,
<i>Galium saxatile</i> ,	<i>T. medium</i> ,
<i>Scilla festalis</i> ,	* <i>T. repens</i> .

(iii.)—Patches :—

* <i>Chrysanthemum Leucanthemum</i> ,	* <i>Hypochoeris radicata</i> ,
	<i>Lathyrus pratensis</i> .

(iv.)—Rare :—

* <i>Cerastium triviale</i> ,	* <i>Rumex Acetosa</i> ,
* <i>Anthriscus sylvestris</i> ,	* <i>Holcus lanatus</i> ,
* <i>Ranunculus acris</i> ,	* <i>Centaurea nigra</i> .

(v.)—Under the boundary wall :—

* <i>Salix Caprea</i> ,	<i>Epilobium angustifolium</i> ,
<i>Stachys sylvatica</i> ,	* <i>E. montanum</i> ,
	<i>Arenaria trinervia</i> .

The larger and newer embankment at Hipperholme yielded seventy species, only one or two of which were aliens. The most abundant were *Linaria vulgaris* and *Matricaria inodora*; *Hieracium vulgatum* and *Chrysanthemum Leucanthemum* were most conspicuous on the slopes and older ground; *Leontodon autumnalis*, *Tussilago*, and *Polygonum Persicaria* were also well to the front. It is certain that at least five of these species will never maintain their dominant position after a year or two.

The second group, of plants present in fair quantity well distributed, was made up of eight common grasses, three clovers, two chickweeds, groundsel, *Rumex Acetosella*, *Plantago lanceolata*, *Epilobium montanum*, charlock, *Atriplex*, *Ranunculus repens*, and *Onicis arvensis*.

Patches, or clumps of *Convolvulus arvensis*, *Spergula arvensis*, *Rumex Acetosa*, milfoil, tansy, timothy grass, *Holcus lanatus* and

*mollis*, *Aira caryophyllea*, *Rumex obtusifolius* and *Acetosa*, with *Heracleum*, *Plantago major*, *Capsella*, *Ranunculus acris*, *Teucrium Scorodonia* (on the older ground only), *Hieracium boreale*, *Polygonum lapathifolium*, and *Cnicus lanceolatus* formed the third group of plants not generally distributed.

The plants of the fourth group, of which either only one or very few individuals were noted, included a young willow (*S. caprea*), figwort, dandelion, groundsel, sowthistle, *Centaurea nigra*, *Hypochaeris radicata*, *Achillea Ptarmica*, *Polygonum Convolvulus*, *Melilotus altissima*, *Lotus corniculatus*, *Silene inflata*, *Saponaria Vaccaria*, *Stachys sylvatica*, *Rumex crispus*, *Alopecurus agrestis*, *Festuca rigida* and *Equisetum arvense*.

The number of species, the character of the dominant ones, the subordinate position of the grasses, though over a dozen were present, all illustrate the immaturity of the flora of this railway bank. A few seedlings of willow and a small specimen of furze were the only representatives of shrubby vegetation, but there were brambles, with bracken, at the foot of the slope.

Whilst there is much in common between the grass associations of the meadow and pasture, and both are found together ascending to 1000 or even 1400 feet, in favourable situations, the hill pasture has a strongly marked character of its own, and the consideration of it is better postponed for the present. But as there is very little meadow land above 900 feet, it is more appropriately included as a feature of the lowland area.

The commonest and most abundant grasses met with in these "mowing fields" are:—

<i>Anthoxanthum odoratum</i> (Sweet Vernal),	<i>Poa pratensis</i> ,
<i>Alopecurus pratensis</i> (Foftail),	<i>Festuca duriuscula</i> ,
<i>Cynosurus cristatus</i> (Dogstail),	<i>Bromus mollis</i> ,
<i>Dactylis glomerata</i> (Cocksfoot),	<i>Lolium perenne</i> (Rye).

Yellow Oat-grass, *Trisetum flavescens* is abundant, but more local in its occurrence; *Holcus mollis* is common along the field borders, and couch grass is more frequent than it should be.

The herbage of any meadow is sure to be made up of at least a dozen species in addition to the grasses. Those that occur invariably, and usually in great abundance, are:—

<i>Ranunculus acris</i> (Buttercup),	<i>Bellis perennis</i> (Daisy),
<i>Anthriscus sylvestris</i> ,	<i>Taraxacum</i> (Dandelion),
<i>Rumex Acetosa</i> (Sorrel).	

The following are not invariably present, but are selected from a longer list of common species:—

<i>Ranunculus bulbosus.</i>	<i>Conopodium denudatum.</i>
<i>Trifolium pratense.</i>	<i>Achillea millefolium.</i>
<i>T. repens.</i>	<i>Plantago lanceolata.</i>
<i>Alchemilla vulgaris.</i>	<i>Luzula campestris.</i>

Two species, viz: *Chrysanthemum Leucanthemum* and *Polygonum Bistorta*, are apt to be very prominent where they occur, but they are much more local in their distribution.

The woods and cloughs are almost inseparable. There are so few cloughs without woods, and so few woods except in the cloughs, or on the valley slopes, that one can hardly be considered apart from the other.

### Woods.

If the woods are first examined by themselves, the remaining plant associations of the cloughs will naturally follow and lead up to the moors. Though the oak is the chief factor in the composition of nearly all our woods, there are two distinct types to be distinguished, each of which is usually seen in the ascent of a clough.

(i) Mixed Deciduous Woods occupy the lower and moister situations, and are characterised by the presence of a great variety both of trees, underwood, and herbaceous vegetation. Beech woods may be considered a variety of this type.

(ii) Dry Oak Woods occupy more elevated, rocky ground, and are characterised by the absence of other forest trees, and the dominance of bilberry, heather, bracken, and moorland grasses. The Birch is always present and sometimes takes the lead, so that the Oak Wood may pass into a Birch Wood. Coniferous Woods, in which Scots Pine, Austrian Pine, Larch, &c., are planted either by themselves, or mixed with oak, are here hardly more than a variety of this type, as the other conditions are all very similar.

The oak wood in a damp situation admits so varied a flora, that it is better to confine the name oak wood to dry wood where the oak is much more predominant, and to call the type under consideration now either a mixed deciduous wood, or a damp wood. Elland Park Wood and Sun Wood may be taken as examples of this type, but even in their

case, the transition to the dry oak wood in the upper part may be observed; a change which is of frequent occurrence in the wooded cloughs in passing from the bottom to the head of the clough, or up its slopes.



The damp wood is characterised not only by the large number of species present, but also equally well by the complete absence of heather and the subordinate position of bilberry. The timber is varied, largely of course from purely artificial causes, and being but thinly planted it admits of a considerable and varied undergrowth of brushwood, and beneath this again a rich assembly of herbaceous plants and carpet vegetation. The oak is the most abundant tree, and often exceeds in number all the others; the sycamore is second, and is followed by the wych-elm. The other forest-trees, ash, beech, birch are relatively subordinate. Of the smaller trees and bushes holly, hawthorn, elder, hazel, willow and mountain ash are all of frequent occurrence, and guelder-rose, maple, cherry (various species) and crab apple are thinly scattered. The most abundant of the smaller shrubs are the bramble, honeysuckle, ivy and roses (especially *R. arvensis*), with raspberry, sloe, bilberry, gorse and broom in less quantity.

The herbaceous vegetation comprises a number of social species, either carpeting the length and breadth of the wood, or forming smaller societies where the conditions are favourable; and in addition, other species found rather as individuals than in societies. The social species do not enter into excessive competition with one another, for though they occupy the same ground, their times of appearance are widely different. The earliest in the procession accomplish their flowering before they are thrown into shade by the foliage overhead, owing to the reserve material stowed away in bulbs, tubers, rhizomes, etc. Coltsfoot, butterbur, perennial mercury, lesser celandine, and wood anemone give place to the sheets of bluebells or wild hyacinths, which are accompanied by stitchwort, garlic, violet, *Lychnis dioica*, wood-rushes, etc. In turn the bluebell disappears almost as completely as the lesser celandine or anemone, hidden in the extensive tracts of bracken—the most social of ferns—or beneath the still taller wood millet grass and *Heracleum Sphondylium*, or in the wildernesses of bramble and trailing rose.

The remaining flora of the mixed deciduous woods is given below in three lists. The first completes the tale of such as are frequently met with, either as individuals or small societies, and it includes quite a number of shade-loving plants; the second enumerates the rarer species, found either very sparingly or in but few localities; and the third contains the marsh plants of the wood. Some of these are to be found in marshy ground outside the woodland area, but an attempt has been

made to limit the list as strictly as possible, by excluding those that are more characteristic of open marshy ground or stream borders in the cloughs.

## COMMON SPECIES.

*Arenaria trinervia*  
*Oxalis Acetosella*  
*Vicia sepium*  
*Geum urbanum*  
*Fragaria vesca*  
*Potentilla Fragariastrum*  
*Epilobium montanum*  
*Circea lutetiana*  
*Conopodium denudatum*  
*Myrrhis odorata*  
*Galium Aparine*  
*Asperula odorata*  
*Veronica montana*  
*Nepeta Glechoma*  
*Prunella vulgaris*  
*Stachys sylvatica*  
*Rumex viridis*  
*R. Acetosa*  
*Tamus communis*  
*Luzula vernalis*  
*L. maxima*  
*Carex remota*  
*Anthoxanthum odoratum*  
*Deschampsia flexuosa*  
*Holcus mollis*  
*Melica uniflora*  
*Dactylis glomerata*  
*Poa pratensis*  
*Bromus giganteus*  
*B. ramosus*  
*Athyrium Filix-fœmina*  
*Lastræa Filix-mas*  
*L. dilatata*

## RARER SPECIES.

*Ranunculus auricomus*  
*Trollius europæus*  
*Stellaria nemorum*  
*Geranium sylvaticum*  
*Vicia sylvatica*  
*Geum urbanum*  
*Sanicula europæa*  
*Campanula latifolia*  
*Solanum Dulcamara*  
*Lathræa squamaria*  
*Neottia Nidus-avis*  
*Epipactis latifolia*  
*Orchis mascula*  
*Narcissus Pseudo-narcissus*  
*Arum maculatum*  
*Carex sylvatica*  
*Festuca sylvatica*  
*Hordeum sylvaticum*  
*Polystichum lobatum*  
*P. angulare*  
*Phegopteris Dryopteris*  
*P. polypodioides*  
*Osmunda regalis*

## COMMON IN MARSHY GROUND.

*Ranunculus repens*  
*Caltha palustris*  
*Nasturtium officinale*  
*Cardamine amara*  
*Lysimachia nemorum*  
*Myosotis palustris*  
*Veronica Beccabunga*  
*Juncus effusus*

<i>Cardamine flexuosa</i>	<i>Carex echinata</i>
<i>Spiræa Ulmaria</i>	<i>C. pendula</i>
<i>Geum rivale</i>	<i>C. lævigata</i>
<i>Angelica sylvestris</i>	<i>Deschampsia cæspitosa</i>
<i>Valeriana sambucifolia</i>	<i>Holcus lanatus</i>
<i>Cnicus palustris</i>	<i>Equisetum sylvaticum</i>
<i>Crepis paludosa</i>	<i>E. palustre</i>

As the beech affords much greater shade than the oak, wherever a beech plantation is met with in the heart of a mixed wood, a corresponding effect may be noticed on the vegetation beneath. Not only is the competition of the beeches sufficient to exclude other forest trees and shrubby undergrowth, but the herbaceous vegetation becomes much more limited. The conditions are dense shade, except in the early spring, and a moist soil enriched with the humus of the decayed leaves. If the trees are close set, hardly anything will be found beneath the carpet of withered leaves, except a few mosses. Such an extreme case is not found here, but the small areas of beech wood in Sun Wood, North Dean Wood, or High Green Wood show the same principle. Such shade-loving or early flowering plants as perennial mercury, wood-ruff, wood-sorrel, anemone, lesser celandine, and blue-bell are generally present, though in greatly reduced numbers; moisture-loving plants like garlic, valerian, *Luzula sylvatica* and *Stachys sylvatica*, may be present. *Heracleum Sphondylium* wins an entrance from the neighbouring wood but is only a shadow of its real self. The common moss *Mnium hornum* seems most at home of anything, and spreads very freely on the ground, the competition of other plants being so greatly reduced. Of the grasses, *Melica uniflora* and *Milium effusum* are both adapted to the shade, but if the wood is more open *Holcus mollis* gains a footing along with the common ferns, *Lastreæ dilatata* perhaps taking the lead. The only shrubs present are ivy, raspberry and blackberry, the last of which is generally confined to the edges.

At the other extremity of the scale, there comes in the dry oak, or oak and birch, wood. Situated on a rocky, dry, elevated slope, moisture is lacking, and there is much more light penetrating through the thinner foliage. So the moisture and shade-loving plants of the damp mixed wood are absent, and their places are taken by a flora which comes in from the moors. Parts of North Dean Wood, or the woods in the Hebden Valley,

**Dry Oak  
Woods.**

or the upper part of Luddenden Dean, and many others are of this type, or, like Rough Hey Wood, Triangle, approach it more or less nearly. Either the oak is the dominant tree, or the oak and birch almost equally numerous, or occasionally the birch is dominant, but no other deciduous trees are at all prominent. The underwood is insignificant, holly, willow, mountain-ash, being the chief representatives. Brambles are prominent, and ivy, honeysuckle, dog rose, raspberry, and sloe frequently present, but the most important shrubs are bilberry and heather. Bilberry almost always covers extensive areas, and often occupies the surface of the rocks, and heather is subordinate; but whenever the wood becomes more open their positions are reversed, so that on the edges and open banks heather is dominant. But these two shrubs do not occupy the whole ground, they share it with bracken and with certain grasses, so that each in turn is dominant and excludes the others. The grass which is most obtrusive is *Deschampsia flexuosa*, and associated with it are *Festuca ovina*, *Nardus stricta*, and *Agrostis vulgaris*. Often *Holcus mollis* forms an extensive stretch of itself. Bracken is the only fern to occupy much ground, but lady-fern, male-fern and *Lastrea dilatata* are by no means absent. The bluebell nearly holds its own in these woods at times, but the other herbaceous plants are very much diminished in number and quantity. The most characteristic are *Potentilla Tormentilla*, *Galium saxatile* and cow-wheat, *Melampyrum pratense*. Such composites as *Solidago Virgaurea* and *Hypochæris radicata* occur on open banks with hairbell, (*Campanula rotundifolia*), and woodsage. *Carex pilulifera* is the most frequent sedge, and a number of mosses are frequently met with. The wintergreens, *Pyrola media* and *minor* also appear to belong to this association, but both are rare.

Occasionally the oak gives place to an almost pure growth of birch, which admits more light, and therefore gives greater encouragement to xerophilous societies like heather, bracken, &c. But, naturally, whether it be oak or birch, the wood is sure to furnish marshy places, along the course of some small stream, where the moisture-loving species already mentioned will be found.

The woods above Hebden Bridge, where Scots Pine and Austrian Pine, and to a smaller extent Larch and Spruce Fir have been planted, conform generally to the type of oak wood on a dry rocky slope, and what has been said of that type applies equally well to them, whether they are, as usual,

mixed with deciduous trees or are entirely coniferous plantations.

The mixed woods lie below 500 feet, and the dry oak woods generally run out below 800 or 900ft. Any extension above them takes the form of an irregular line

**Clough** of trees and shrubs bordering the stream-  
**Vegetation.** course, or of scrub on the uncultivated rough slopes. The most characteristic trees along the stream-banks are oak, mountain-ash, birch, and alder, with bushes of hawthorn, hazel, willow, holly, roses, and brambles. Closely associated with them are the foxglove, hair-bell, wood-sage, the common ferns already named and also the hard-fern, *Lomaria Spicant*, the sweet mountain-fern, the rare bladder-fern, and other herbaceous plants mentioned below.

The rough, undrained slopes towards the clough head, ranging between 600 and 1,000ft. furnish ground for a varied and rich flora, on account of their never being disturbed, so that moor and heath plants share the drier ground with the shrubs and dwarf trees that form a characteristic scrub, whilst the numerous rivulets form steep, dripping banks, or wide-spreading swamps, where marsh-plants abound. Ogden Clough, Broadhead Clough near Hollock Lea, the right bank of Turner Clough may be taken as examples, but almost every clough contains such an area.

The scrub is composed of:—

Oak	Hawthorn	Roses (spp.)	Bilberry
Mountain Ash	Blackthorn	Brambles (spp.)	Heather
Birch	Hazel	Gorse (2)	Heaths (2)
Holly	Willows (3)	Broom	Bracken.

The general herbaceous vegetation, exclusive of the marsh plants which are given separately, includes the following, of which those that are restricted to one or two stations are placed within brackets:—

<i>(Viola lutea)</i>	<i>Centaurea nigra</i>
<i>Polygala depressa</i>	<i>Hieracium Pilosella</i>
<i>Linum catharticum</i>	<i>Campanula rotundifolia</i>
<i>Oxalis Acetosella</i>	<i>(Pyrola media)</i>
<i>Potentilla silvestris</i>	<i>Digitalis purpurea.</i>
<i>P. procumbens</i>	<i>Veronica montana</i>
<i>Alchemilla vulgaris</i>	<i>Euphrasia officinalis</i>
<i>Galium saxatile</i>	<i>Melampyrum pratense</i>
<i>Scabiosa succisa</i>	<i>(Scutellaria minor)</i>



*Bellis perennis*  
 (*Antennaria dioica*)  
*Tussilago Farfara*  
*Senecio Jacobæa*

*Prunella vulgaris*  
*Teucrium Scorodonia*  
*Luzula erecta*  
*Carex pilulifera*

The chief grasses occurring with them are ;—

*Deschampsia flexuosa*  
*Festuca ovina*  
*Nardus stricta*  
*Molinia varia*

*Agrostis vulgaris*  
*Sieglingia decumbens*  
*Holcus lanatus*  
*Anthoxanthum odoratum*

The ferns are not so gregarious as they are lower down, not even the bracken, though it becomes so again higher up. The following are met with :—

*Pteris aquilina*  
*Lomaria Spicant*  
*Athyrium Filix-fœmina*

*Lastræa Oreopteris*  
*L. Filix-mas*  
*L. dilatata*

The list of plants found in the swamps towards the clough-head is a lengthy one, and on the whole shows but little variation from place to place. The chief difference is produced by altitude. Lower down Herb Robert, Figwort, Valerian, Angelica, Wall Lettuce, Meadow Sweet, *Cardamine flexuosa* and *Chrysosplenium oppositifolium* enter into the association, whilst nearer the moors they give place to Marsh Violet, Sundew, Butterwort, Cranberry, Bog Asphodel, and *Potamogeton polygonifolius*. The birch and willows (*S. Caprea*, *S. aurita* and *S. repens*) are the only shrubs that endure the excessive moisture, unless the cross-leaved heath be included with them.

The general list of these swamp-plants is as follows :—

*Ranunculus Lenormandi*  
*R. Flammula*  
*R. repens*  
*Caltha palustris*  
*Cardamine pratensis*  
*C. flexuosa*  
*Viola palustris*  
*Lychnis Flos-cuculi*  
*Stellaria graminea*  
*S. uliginosa*  
*Montia fontana*  
*Hypericum quadratum*  
*H. humifusum*

*Myosotis cœspitosa*  
*M. repens*  
*Veronica Beccabunga*  
*Pedicularis sylvatica*  
*Ajuga reptans*  
*Orchis latifolia*  
*O. maculata*  
*Habenaria chloroleuca*  
*Juncus bufonius*  
*J. effusus*  
*J. conglomeratus*  
*J. lamprocarpus*  
*Potamogeton polygonifolius*

<i>Lotus uliginosus</i>	<i>Scirpus setaceus</i>
<i>Chrysosplenium oppositifolium</i>	<i>Carex echinata</i>
<i>Callitriche stagnalis</i>	<i>C. curta</i>
<i>Epilobium obscurum</i>	<i>C. ovalis</i>
<i>E. palustre</i>	<i>C. Goodenowii</i>
<i>Hydrocotyle vulgaris</i>	<i>C. flacca</i>
<i>Ænanthe crocata</i>	<i>C. lævigata</i>
<i>Galium Witheringii</i>	<i>C. binervis</i>
<i>Valeriana dioica</i> (rare)	<i>C. flava</i>
<i>Solidago Virgaurea</i>	<i>Phalaris arundinacea</i>
<i>Achillea Ptarmica</i>	<i>Alopecurus geniculatus</i>
<i>Senecio aquaticus</i>	<i>Agrostis palustris</i>
<i>Cnicus palustris</i>	<i>Deschampsia cæspitosa</i>
<i>Crepis paludosa</i>	<i>Glyceria fluitans</i>
<i>Taraxacum palustre</i>	<i>Equisetum sylvaticum</i>
<i>Lysimachia nemorum</i>	<i>E. limosum</i>
	<i>Sphagnum</i> spp.

This association differs very much from the previous lists of aquatic and marsh plants, and the rushes and sedges in particular are numerically well represented. It should not be overlooked that in addition to *Sphagnum*, many mosses and hepatics are members of the society.

It only remains to glance at the uppermost portion of its course, where it exists as a moorland rill, to complete our survey of the stream we have been working up. The associations met with here more properly belong to the moors, but the bracken may be looked upon as a clough plant which follows the stream up as long as the slopes of the dwindling valley afford it any shelter. Its upward limit is about 1200 feet, and its presence may easily be recognised at a distance, by the strong contrast the bracken-clad slopes make with the heather or other adjoining moorland societies, as is well seen on approaching Gorple Water, or the upper part of Walshaw Dean. Though the two heaths (*Erica*) also stop short at about 1,250 feet, their case is not similar, for they are also found on the flat moor top, as well as on the slopes, whereas bracken is not. The hard-fern also follows the stream up to this stage, and the rushes, *Sphagnum*, *Polytrichum commune* and other mosses are found on its banks. *Veronica scutellata* seems to belong to this association exclusively, but there is no recent record of it.

In approaching the moors from the cloughs, we pass through an intervening belt of pasture land, the farm-houses

being dotted along the hill-side. Two-thirds of this is probably permanent pasture and almost all the rest meadow,

**Hill Pastures.** for it lies above the wheat area, and the amount of arable land devoted to oats or other crop is quite insignificant. These hill pastures present a more varied association of plants than do the fields at a lower level, for the turf is very rarely turned by the plough, many of them are ill-drained, and others are running back to moorland. In addition to the more ubiquitous of the meadow grasses, which form a part of the herbage, the upland pastures contain others which are more characteristic, viz. :—

<i>Agrostis vulgaris</i>	<i>Briza media</i>
<i>Deschampsia flexuosa</i>	<i>Festuca ovina</i>
<i>Sieglingia decumbens</i>	<i>Nardus stricta.</i>

The general flora of the pastures is much larger than that of the meadows. All the species already mentioned as occurring in meadows may be looked for, with the exception of *Anthriscus sylvestris* and *Polygonum Bistorta*, which are almost, if not entirely, absent. The additional species of permanent pasture may be divided into two classes according as they are (i) common to all types of pasture, or (ii) confined to the more elevated or hill pastures. The first includes :—

<i>Trifolium dubium</i>	<i>Hypochæris radicata</i>
<i>Lotus corniculatus</i>	<i>Leontodon hispidus</i>
<i>Lathyrus montanus</i>	<i>L. autumnalis</i>
<i>Potentilla silvestris</i>	<i>Campanula rotundifolia</i>
<i>Galium saxatile</i>	<i>Veronica Chamædrys</i>
<i>Senecio Jacobæa</i>	<i>Prunella vulgaris</i>
<i>Cnicus lanceolatus</i>	<i>Ajuga reptans</i>
<i>Centaurea nigra</i>	<i>Rumex Acetosella</i>
<i>Hieracium. Pilosella, &amp;c.</i>	<i>Ophioglossum vulgatum.</i>

The less cultivated pastures on the edge of the moors may also yield :—

<i>Viola lutea</i>	<i>Erythræa Centaurium</i>
<i>Polygala serpyllacea</i>	<i>Gentiana Amarella</i>
<i>Hypericum pulchrum</i>	<i>Euphrasia officinalis</i>
<i>Linum catharticum</i>	<i>Thymus Serpyllum</i>
<i>Pimpinella Saxifraga</i>	<i>Luzula erecta</i>
<i>Scabiosa succisa</i>	<i>Carex spp.</i>
<i>Gnaphalium sylvaticum</i>	<i>Botrychium Lunaria.</i>
<i>Jasione montana</i>	

These are representative of a dry but undrained pasture ; in wet ground many of the clough-swamp plants take their places. Frequently these upland pastures are reverting to moorland, and are more or less overgrown with heather and bilberry (though both are small and inconspicuous); and clumps of bracken, and such shrubs as hawthorn, bramble, rose, gorse (*U. Gallii*), broom, and willows are scattered about. The orchids also chiefly occur in these pastures, such as the twayblade, frog, butterfly, and fragrant orchids, nor do the plants mentioned exhaust the list.

The plant associations of the moors present a number of difficult and very much neglected problems. The origin of the peat itself is still obscure, and whilst its relation to the vegetation which it supports has been elucidated to some extent in recent years, a faithful representation of the botanical features of a moor has hardly been attempted in England, though the late Robert Smith has shewn the way in his "Botanical Survey of Scotland."\* But the popular belief that a moor is a rolling stretch of heather is still supported by scientific writers, in spite of the fact that on many extensive moors, heather is conspicuous only by its absence. This is pre-eminently the case in the parish of Halifax, where the heather-clad moors are very much less in extent than the cotton-grass moors. This comparative neglect of the study of the peat-vegetation is the more surprising inasmuch as the disturbing influence of man enters less into the problem than anywhere else ; though it is probably due to the monotonous character and the poverty of the moorland flora.

To a certain extent, however, the moors are under cultivation, and round the edges especially, drainage and the disappearance of peat from one cause or another, lead to the production of a type of **Grassy Moors.** unenclosed moor where grasses are predominant. The hill-pastures already described are largely what is shown on the ordnance maps as land brought under cultivation and enclosed, that is to say, they have been ploughed at least once, at any rate where they are not too steep. But in many respects the plant associations of these hill-pastures are not distinguishable from those of the grassy moor. The latter may be composed almost exclusively

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\*Scottish Geographical Magazine, Vol. xvi., July-August, 1900,

of grasses like *Festuca ovina* or *Nardus stricta*, mingled with *Deschampsia flexuosa*, *Potentilla silvestris*, *Galium saxatile*, and similar turf-forming plants; or heather may also be present in varying amounts, though occupying a subordinate position, and accompanied by bilberry and other peat plants; or again, on ill-drained level stretches like Erringden Moor the blue moor-grass *Molinia varia* may prevail, and along with it *Erica Tetralix*, *Juncus squarrosus*, *effusus*, and *conglomeratus*. Where the grassy moor is contiguous to a heather moor, it naturally approaches it also in the character of the vegetation; so also where it leads up to a cotton-grass moor, *Eriophorum* and *Empetrum* naturally enter into the association. So much so that the moor along Langfield Edge, where *Festuca ovina* is dominant, is considered later as a variation of the cotton-grass moor.

The constant association of heather and bilberry and the extreme latitude of their range, is one of the most marked features in the flora of the parish. They may be traced from the extreme east, between Brighouse and Elland at 200ft. or less, up to the top of Boulsworth Hill (1700ft.) beyond the western border. No other plant is so widely distributed except the grass *Deschampsia flexuosa*, which almost invariably accompanies them. Yet their relative positions are always changing under the combined influence of light, moisture, and soil, and no association would better repay a careful examination of the conditions which are more favourable to one member than the other. Their place in the oak woods has been already discussed; on the slopes of the cloughs above the woods it seems impossible to say which is likely to be the more abundant; on the lower moor, however, the heather has a decided advantage, which is lost again on the summits and highest ridges.

The heather moor then is one of moderate elevation, and also of moderate humidity, and it may be added of moderate extent. It is either a detached or isolated moorland, or forms the outer ring bordering the wetter higher "mosses," where cotton-grass alone prevails. Norland Moor and Ogden Moor are the most familiar examples of it, but though parts of Midgley, Heptonstall, Stansfield, and Rishworth moors are heather-clad they are rather the out-lying spurs. Swill Hill is a striking instance of an isolated heather moor, invaded in parts by grass associations, but still retaining *Triantalis* as one



of its features. Other associates of heather on peat, such as *Andromeda*, *Arctostaphylos*, *Pyrola*, and *Listera cordata*, are either now extinct or too limited in distribution to include in the following list.

The associates of heather on such moors are :

<i>Erica cinerea</i> (Heath)	<i>Juncus squarrosus</i>
<i>Vaccinium Myrtillus</i> (Bilberry)	<i>Scirpus cæspitosus</i>
<i>V. Vitis Idæa</i> (Cowberry)	<i>Carex Goodenowii</i>
<i>Genista anglica</i>	<i>C. flacca</i>
<i>Ulex Gallii</i>	<i>C. pilulifera</i>
<i>Antennaria dioica</i>	<i>Deschampsia flexuosa</i>
<i>Potentilla silvestris</i>	<i>Nardus stricta.</i>
<i>Galium saxatile</i>	

In moister places Bilberry and *Juncus squarrosus* become more prominent, and additional species appear, viz :—*Erica Tetralix* (Heath) and *Empetrum nigrum* (Crowberry); and in boggy patches,

<i>Schollera Oxycoccus</i>	<i>Potamogeton polygonifolius</i>
<i>Ranunculus Lenormandi</i>	<i>Eriophorum vaginatum</i>
<i>Montia fontana</i>	<i>E. angustifolium</i>
<i>Drosera rotundifolia</i>	<i>Carex pulicaris</i>
<i>Narthecium ossifragum</i>	<i>C. curta</i>
<i>Juncus conglomeratus</i>	<i>Molinia varia</i>

and species of *Sphagnum*, but the members of this last list are by no means obtrusive on the heather moor.

So far we have had under consideration what has been termed the “Heide” and “Heidemoor,” the distinction between the two not being very well marked in this district. We now come to the high **Cotton-grass Moors.** moors that bound the parish on the south-west, west, and north-west. These appear to correspond to the “Sphagnum-moor” or “peat-bog,” in which the peat attains its maximum development, but as the dominant plant over the whole of this area is undoubtedly the cotton-grass, *Eriophorum vaginatum*, the name Cotton-grass Moor, or Eriophorum Moor—as suggested by Mr. C. E. Moss, who has been the first to call attention to this characteristic feature—will be used to designate it, though it is as well to mention that cotton-grass is not a grass at all, but a sedge. The aspect of these “mosses” differs very much from that of the heather-moors. Wiry, creeping bushes give place to innumerable, grass-like tussocks, which

afford the only safe footing amid the channels of black peat and the treacherous patches of bright-green bog-moss. Instead of the purple haze of autumn, they furnish a dazzling snow-white harvest in spring, and in winter the sombre ling is readily distinguished in the landscape from the green, yellow, and red hues which denote the cotton-grass.

A pure Cotton-grass moor as on Boulsworth Hill and Jackson's Ridge is composed of *Eriophorum vaginatum* almost exclusively. The other cotton-grass, *E. angustifolium*, occasionally becomes prominent, but as a rule it is as limited in amount as bilberry, crowberry, and heather. On the slopes however, and on rocky ground, these latter enter more largely into the association, and in places there may be a good deal of them. The following table shows the relative abundance of the species present:—(1) North of Widdop Reservoir, and (2) on the slopes of Boulsworth Hill and Jackson's Ridge from about 1100ft. to 1500ft. Their presence is indicated by the *plus* sign, the most abundant ones being distinguished by its repetition; the *minus* sign is used for those which are present in only small quantity, or locally in wetter places, and the *zero* attached to such as are absent. At the same time the position of the plants in the list also indicates their comparative importance.

	WIDDOP 1100-1200ft.			BOULSWORTH 1100-1500ft.		
<i>Eriophorum vaginatum</i>	+	+	+	+	+	+
<i>Empetrum nigrum</i>	+	+		+		
<i>Vaccinium Myrtillus</i>	+			+		
<i>Calluna Erica</i>	+			0		
<i>Juncus squarrosus</i>	+			+		
<i>Sphagnum spp.</i>	+			+		
<i>Eriophorum angustifolium</i>	+			-		
<i>Molinia varia</i>	+			-		
<i>Nardus stricta</i>	+			-		
<i>Deschampsia flexuosa</i>	+			0		

It is also possible that *Erica Tetralix* occurs in small quantity; it certainly is not far off at rather lower levels. The strong development of the crowberry is a noticeable feature of this association, as is also the presence of the tufts of blue moor-grass.

The transition from the grassy moor to the cotton-grass moor may be traced on Langfield Edge, where the slopes are situated on Yoredale shales, and so though they are decidedly

wet, peat is but slightly developed. It extends from Stoodley Pike along Langfield Edge, past Gadden reservoirs nearly to Todmorden and rises to about 1250ft. Heather is entirely absent, and only one small patch of the cross-leaved heath (*E. Tetralix*) was noted, near the reservoirs. Nor does bilberry occur in anything more than small patches, but crowberry (*Empetrum*) is much more plentiful. Sheep's Fescue grass, *Festuca ovina*, is the dominant species on the slopes, and the two cotton-grasses are found freely with it and more so on the edge. *Deschampsia flexuosa* and *Juncus squarrosus* are also common. Cranberry and other marsh plants are present in the Sphagnum swamps. As soon as the top is reached and the Yoredale left behind, the moor to the south become more like the prevailing type.

There remains one more feature to note before finishing with the moors, and that is the greater development of bilberry on the very summits, so that along the ridges above 1400ft. it becomes the dominant feature.

**Bilberry Ridge.** This may be seen on Waystones Edge, where *Rubus Chamæmorus* and *Empetrum nigrum* are associated with it, on Gorple Stones, Dovestones, and other heights, but it is most marked on the top of Boulsworth, which is some two hundred feet higher. As the top is approached the cotton-grass becomes less prominent, and the summit is occupied by bilberry. There is a good deal of *Juncus squarrosus* growing with it there, and the inseparable heather and *Deschampsia flexuosa*, though only in small quantity, also *Festuca ovina*. The interest of this lies in the way it just brings our moors into line with many of the Scotch mountains, on which from 2000 to 3000ft., the bilberry or blaeberry becomes in the same way the dominant species.

Blackstone Edge, though somewhat lower and therefore allowing the presence of more members in the association, clearly comes within the area where bilberry is dominant. The crowberry is also well to the front, and heather much more prominent than on Boulsworth.

## CHAPTER III.

### Historical and Biographical Sketch.

ANY records of Halifax plants that have been handed down from pre-Linnean times are exceedingly scanty; but since the middle of the eighteenth century the parish has possessed an unbroken succession of resident botanists, whose publications and collections taken conjointly, embody a mass of information on the local flora, which has been invaluable in preparing the present work, though some portions of it are unrepresented.

The second part of Turner's Herball published in 1562, contains the first specific notice of a Halifax plant—"It was told me by a learned man, a frende of myne, that in the year of our lorde, mdlvii., that there was a great plentye of galles found upon oke leves in the North countre of England and namely about Hallyfax." A century later the *Pinax* of Christopher Merrett, 1666, enumerates four, each of exceptional interest, viz:--the club-moss, *Lycopodium alpinum*, near the mile cross, west from Halifax; *Lycopodium Selago*, at Dovestones; *Pyrola rotundifolia* (= *media*), "at North Bridge, half-a-mile from Halifax, plentifully"; and the bearberry, *Arctostaphylos Uva-ursi*, on a great stone by the river Gorple. This last constitutes the first British record of the plant, as possibly do the first and second also. What a commentary on the changes the last two hundred and fifty years have brought about is afforded by these prosaic details! Gorple Stones and Dovestones are still much as they were, though the bearberry has probably gone, but for the others to grow in what is now the heart of Halifax, shows that the Hebble valley and the slopes on which the town is built were then more secluded than Norland Clough and Moor are to-day. The winter green (*Pyrola*) also attracted the attention of the famous John Ray, who records it in 1670 on the road to Keighley, and again in 1690 as growing 'on the moors south of Heptenstall on the way to Burnley, in great plenty for near a mile's riding.'

In 1724 Ray's Synopsis of British Plants was revised by Dillenius, the first Professor of Botany at Oxford, who was indebted to Dr. Richardson for most of the plants mentioned from this locality. Dr. Richardson, though not resident in the

parish, lived only three miles across the border at Bierley Hall, near Bradford, so that it is natural that some of his material should be drawn from it. One, *Senecio saracenioides*, has never been reported again, being a denizen which has gone out of use, another, *Meum Athamanticum*, has become extinct in recent years, but the others, Mountain Pansy, Wood-sorrel, Toothwort, Daffodil, and *Andromeda Polifolia* still remain, the daffodils in particular flourishing in the same station—Coley Hall—as in 1724. Golden-rod, a typical Halifax plant, also finds a place in this list though on a different authority. The lists of rarer plants at the end of T. Martyn's *Plantæ Cantabrigienses* (1763) also include a few from Halifax, but the only additional one is Bistort. So far, therefore, in the course of two centuries only fourteen plants have been enumerated, and these chiefly on account of their rarity, the commoner wood-sorrel only being mentioned to call attention to its being found with purple flowers. But we now reach the period of local activity inaugurated by James Bolton, “of Stannary near Halifax.”

Apart from his botanical work very little is known about James Bolton. The period of his activity is usually stated to range from 1775 to 1795, but as he himself states that he knew of and saw the Killarney Fern at Bingley as early as 1758, it is evident that he must have turned his attention to botany some thirty years before he published a work under his own name. A fortunate incident has enabled me to ascertain the date of his death, though at present his age, his birth-place, and his grave all remain unknown. One of the predecessors of the Rev. Fr. E. Millson at Northgate End Chapel, Halifax, was the Rev. John Ralph, and a small house-keeping book of Mrs. Ralph, used by her as a kind of diary, and now belonging to her descendant Mrs. Millson, contains the following entry in January, 1799:—

“On Monday the 7th inst., died of a rapid decline the self-taught Painter and Naturalist, Mr. James Bolton, much regretted by all who knew his modest worth, and particularly by those of his friends who had the most frequent opportunities of enjoying his conversation and were best acquainted with his merit. His kind notice of my Sophia and wish to improve her in drawing I shall never forget, and the valuable paintings given to me by him, I shall ever value and keep as Memorials of him.”



The "History and Antiquities of the Parish of Halifax," written by the Rev. John Watson, and published in 1775, contains on pp. 729-764, "A Catalogue of **Catalogue of Plants.**" Plants growing in the Parish of Halifax; the Description from Car. Linnæi Species Plantarum, Holmiæ 1753, and Gulielmi Hudsoni Flora Anglica, London 1762." There is no clue whatever in the History itself to the authorship of this Catalogue, but it has been generally attributed to James Bolton.\* From this there is no reason to dissent, and the records reproduced in this Flora from the Catalogue are accordingly entered "1775 . . . J.B.," or "J. Bolton"; but I had hoped to have traced the original acknowledgment, or to have obtained more direct proof than I have gleaned. For such evidence as is forthcoming I am indebted to Dr. F. Arnold Lees, who wrote in 1895, "I have *seen* the acknowledgment in *Bolton's own hand*, but I was using the late Rev. W. W. Newbould's copy of Watson's History . . . What became of N's copy after his death I know not"; and again in the *Naturalist* for August, 1900, "The manuscript was seen by my late friend the Rev. W. W. Newbould, and he said it was in Bolton's old style hand, and agreed with notes, etc., to the Original Drawings of the 'History of Ferns.'" Apart from the fact that there is no one else to whom to assign the authorship, the internal evidence of the Catalogue and its close resemblance to Bolton's subsequent publications justify the general assumption. The similarity of style may be noted on comparing the duplicate entries of the ferns, and the same holds good with regard to the mosses and fungi of the Catalogue and of the later works. Occasional references by other botanists are also confirmatory, as may be seen on turning to *Geranium pyrenaicum* (pp. 21-22). The author of the Catalogue, though careful to record the success of the experiment of introducing seed from Bingley (which Bolton visited more than once), leaves it to King to say who was the sower. Again the Catalogue contains the first local record of *Campanula hederacea*, and Hudson three years later in the second edition of his Flora makes mention of it growing "*prope* Halifax" on the authority of Bolton. So the hepatic *Blasia pusilla*, specially localised in the Catalogue as being 'rare and curious' appears in Hudson

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\*Lees' Flora of West Yorks., p. 89; Dict. Nat. Biog., Art., J. Bolton; Britten and Boulger's Biog. Index of Botanists, &c,

(2nd Edition) from 'Halifax, D. Bolton,' and *Lichen pustulatus* similarly.

As the main features of the Catalogue, as far as it relates to flowering plants have been discussed in a paper on the "Changes in the Halifax Flora during the last Century and a Quarter," by C. E. Moss, B. Sc. (*Naturalist*, June, 1900, pp. 165-172), and attempted explanations of the difficulties have been given both there and under the various species in the body of this work, it is unnecessary to go over the ground again. The principle of selection is the first difficulty; perhaps the most probable explanation is that Bolton sought to enumerate all the rarer plants known to him, and ignored most of the common ones—a plan adopted in many guide books and county histories. The localities are uniformly given in the case of the Flowering Plants and Ferns, which are numbered consecutively from 1 to 197, but include three others incidentally. Thereafter "to avoid being tedious" they are omitted, "but the more curious Botanic Reader, by application to the Publisher, may be informed where he may receive ample information." The Musci are numbered from 198 to 289; Algæ (*i.e.*, Hepatics) from 290 to 315, Lichen, numbers 316—433; and Fungi, numbers 434—489.

The first work signed by James Bolton appeared in Relhan's *Flora Cantabrigiensis*, 1785, and consisted of seven plates of plants drawn or painted by him, and engraved by James Sowerby. In the same year he published the first English monograph on the Ferns. This is "*Filices Britannicæ; An History of the British Proper Ferns, with Plain and Accurate Descriptions and New Figures of all the Species and Varieties . . . By James Bolton, of Halifax.*" [London, B. White, 4to pp. xvi. and 59; Price in Boards, Coloured, 1l 7s.; Plain, 13s. 6d.] The first volume contains thirty-one copper plates, and the introduction, which is dated August 16th, 1785, states—"The drawing and etching of the figures are performed wholly by my own hands, from a close and careful inspection of the plants . . . I chose to undertake it myself, though I had never before practised the art of etching." It was completed by the issue in 1790 of a second volume, chiefly devoted to the horse-tails, and containing fifteen plates. The illustrations are very beautifully drawn and coloured, and as the criticisms in Newman's 'History of British Ferns' show, they are, as a rule, also characteristic of

the plants and 'yield to none in excellence.' The signature on the plates is sometimes quaintly precise, thus of tab. 43 :— " Etched on the Copper immediately from the Plant, September the 26, A.D., 1790. By J. Bolton at Stannary near Halifax." The work appears to contain the first description of *Polypodium Robertianum*, as a variety of *P. Dryopteris* and of *Woodsia hyperborea* under the name of *Acrostichum alpinum* (tab. 42). Bolton was a correspondent of various British botanists at this time, such as Edward Robson of Darlington, and James Dickson the cryptogamist. Thus, in his concluding paragraph he says—" Specimens of *Polypodium rhœticum* and *Acrostichum thelypteris* were sent me by my friend Dickson, author of the *Plantarum Cryptogamicarum Britanniaë*." The latter plant is the one figured on plate 43, and the following letter is of interest as bearing upon it. It should be remembered in connection with it that Bolton's *Polypodium Thelypteris* in the first volume (tab. 22) was in reality *P.* or *Lastræa Oreopteris*, and that plate 43 in Vol. II. represents the true *Lastræa* (or *Acrostichum*) *Thelypteris*, as there named.

The original letter, inserted in what is presumably Bolton's presentation copy to Dickson,\* is in the Free Library, Todmorden, and the Librarian has obligingly furnished me with a copy for publication :—

Stannary : near

Halx, Jan. 6th, 91.

Sir,

If you will call at Messrs. Whites Booksellers Fleet Street, you will have a copy of my present publication which I ordered my Binder to enclose in his parcell: it is wrapped in a separate paper and directed to you; so you have nothing at all to pay. I hope you will accept it without any kind of ceremony.

I found myself under the necessity of differing from you in opinion concerning the plant you Lent me under the name of *Polypd<sup>m</sup> thelypteris*, it is undoubtedly an *Acrostichum*, and such I have called it. Your *P. oreopteris* is the plant which by late Authors has been called *P. thelypteris* of this their can be no doubt: but why or by whom Linnæus's synonym of *Acrostichum Thelypteris* come to be applied thereto I cannot discover; But I am sure no man who has proper conceptions of the extraordinary penetration and accuracy of the Immortal Linnæus can believe that he would call the *Polyp<sup>m</sup> thelypteris* an *Acrostichum* or the *Acrostichum thelypteris* a polypody.

I believe you will agree with me concerning the *Acrostichum alpinum*, not doubting but you have taken notice of the dissimilitude which obtains between it and the Ilvense; you know that I am an inveterate enemy to the unnecessary multiplying of species; yet no one is more happy than I

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\*A MS. Index on a slip of paper fixed at the end of this copy is signed "J.D."

am to divide and ascertain two species which have been considered together as but one. I shall be glad to hear from you and to be informed of many new species (particularly Fungi) discovered since I heard from you last.

Mr. J. Dickson,  
Gardener,  
Covent Garden,  
London.

I am,  
Sir,  
Your Obedt. Servant,  
J. Bolton.

Bolton's desire to receive any new species, particularly fungi, is explained by the fact that he had now on hand and had almost completed his important work on "**Fungusses.**" fungi. This was similar in plan to the Ferns, but extended into four volumes though it was restricted to those growing about Halifax. The introduction to the first volume of "An History of Fungusses growing about Halifax" is dated January 1st, 1788, and that of the Appendix or Supplement "by which the work is completed in four volumes; containing 182 copper plates on which are engraved 231 species of Fungusses, exhibited in about 900 figures," December 31st, 1791. As before, there were two styles of issue, that with coloured plates costing eight guineas. The work is dedicated to the Earl of Gainsborough, who received the original drawings. "I am happy, my Lord, to embrace the Opportunity of acknowledging, that it is your LORDSHIP'S Generous Encouragement, together with that of your late Noble Relative, the GOOD DUCHESS DOWAGER of PORTLAND, that the Work in a great Measure owes its Existence" Henry, the sixth Earl of Gainsborough, was an Honorary Member of the Linnean Society and a well-known botanist, and doubtless helped Bolton considerably in the production of such a costly work. Some other drawings which he received from Bolton are now in the British Museum of Natural History, but it is doubtful whether the originals for the History of Fungusses are still in existence. They were probably destroyed by fire when the old Hall at Exton (the family seat) was burnt in 1810.

The next glimpse we get of Bolton shows him in a different light. Having got his Fungusses out of hand he turns his attention to the birds, and begins the preparation of another monograph. Only six weeks after the last volume is despatched he writes to a friend, John Ingham, the master of Cockpit School, Illingworth, near Halifax, as follows : \*

Stannary-yd., 10th Feb., 1792.

Friend Jno. Ingham.—In the course of the spring I shall be in want of the birds in the list below, and desire your assistance in procuring them. My boy brings some powder and shot, and I will very willingly make you a proper compensation for the time it may cost you. When both cock and hen cannot be got, the cock will always be preferable.

1, the missel bird; 2, the throstle; 3, the black ouzle; 4, the ring ouzle, about the skirts of our moors in May; 5, the skylark; 6, the titlark, both kinds; 7, the moor titing, or brown lark, or pippet lark; 8, the woodlark; 9, the lesser redpole, or chisaree; 10, the redpole, or twite; 11, the common linnet; 12, the green linnet; 13, the common bunting; 14, the reed sparrow; 15, the common flycatcher; 16, the common yellow wagtail, found about ploughed ground in the month of May; 17, the redstart, or fire tail; 18, the robin redbreast; 19 the black cap, a summer bird, concealed in woods, the head of the cock black, of the hen brown, comes in April; 20, the straw smalls; 21, the green wren; 22, the hedge sparrow, or dunnock; 23. the willow lark; 24, the white throat; 25, the wheatear. If you can procure from any of the idle boys of your neighbourhood, in the course of building time, the nests with eggs unset of the following of the above Nos., the nests not to be much ruffled or torn, I will pay you 6d. a piece for them, viz.: No. 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 20, 21, 24.

You must know, John, that I have been so long tilted between roses and toadstools, and back again from toadstools to roses, that I am wearied out with both for the present, and wish (by way of recreation only) to turn for awhile to some other page in the great volume. I have not painted a bird this nine or ten years, and yet have so much of this ugly self-sufficiency about me, that I think I can do it tolerably, after a few days' practice. Birds for drawing should not be much ruffled, and the colour of their eyes should be noted while living or as soon as dead.

I am, your humble servant,

JAMES BOLTON.

The result of this preparation was 'Harmonia Ruralis, or an Essay towards a Natural History of British Song Birds. Illustrated with Figures the Size of Life of the Birds, Male and Female, in their most natural Attitudes; their Nests and Eggs, Food, favourite Plants, Shrubs, Trees, &c., &c. Faithfully drawn, engraved and coloured after nature. . . . By James Bolton.' This was issued in 1794 and 1796, in two quarto volumes, each containing forty coloured plates, and

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\*Historical Notes on the Church at Illingworth, No. VII., *Halifax Guardian*, May 10th, 1879. The extracts from John Ingham's memorandum note book in this article include one or two references to Bolton, viz.:

March 1st, 1782.—I went to J. Bolton's, where I had the pleasure of seeing Swammerdam's Philosophical Account of Insects. He (Bolton) sent his son, Thomas, with a few lines to Mr. Alexander's for it.

October 30th, 1782.—A short account of a collection of insects, shells, and fossils, the property of Thomas Bolton [Butterflies, 400; Sphinxes or Hawks, 40; Moths, many hundreds; Beetles, a great number.]



a new edition was published in 1830. The first edition appears to be now much scarcer than his botanical books, though these fetch a good price. The copy at Todmorden is marked on the fly-leaf in pencil, '£7 7s.'; and again '£3 15s. scarce.'

The chronicle of Bolton's activities ceases with the year 1796 and, as mentioned above, he died in 1799, but there are other remains of these productive years.

**Botanical  
Drawings.**

Several sets of his drawings are in the British Museum (Natural History), and I am indebted to Mr. B. W. Woodward of the Museum for the following particulars of them. (i.) "Original drawings to Bolton's History of Ferns pts. 1 and 2," except those for plates 5, 9, 12, 25, 32, 42, 45, and 46. The first nine are in colour, the rest in Indian-ink (?). They were formerly part of Sir Joseph Banks' Library. (ii.) Twenty-four drawings in colour of Fungi from the neighbourhood of Halifax, executed 1788-94. None of these were reproduced in his History of Fungusses, but some may have been used as bases for the figures. (iii.) "Fifty Flowers drawn from Nature at Halifax by James Bolton, A.D., 1785, 86 and 87." All drawings in Indian-ink (?) of cultivated plants. The work bears on the fly-leaf "Wm. Horne, F.G.S., Leyburn, Yorkshire, 1894." Mr. Horne, who sold the "Fifty Flowers" to the British Museum, says that it was presented by Bolton to his patron, the Earl of Gainsborough. The medium employed for the drawings he thinks is sepia. Mr. Horne still retains a set of sixteen water-colour drawings of flowers, both cultivated and wild, and there are, I believe, a few others in existence.

Such is the tale of Bolton's life work, pieced together from many sources. Self-taught, versatile, a marvel of industry and patience; his work stands well the test of time, unmarred by haste or inaccuracy: not absolutely free from error—how could it be?—it justifies the unstinted admiration of us who reap what he has sown.

The memory of Roberts Leyland is preserved by his Herbarium of British Plants, now deposited in the Belle Vue Museum, Halifax. The son of William

**Roberts  
Leyland.**

Leyland, he was born in 1784, and from his boyhood he was deeply interested in botany, and was an enthusiastic collector. He was a member of a respected Halifax family, and of the firm of Leyland & Son, Printers. He married a daughter of Joseph Bentley, of Well Head, and his sons, J. B. Leyland and F. A.

Leyland, Junr., were distinguished, the one as a sculptor, the other as a local historian and antiquarian. To his grandson, Mr. John Leyland, I am indebted for information not otherwise obtainable.

The Halifax Literary and Philosophical Society was founded in 1830, one of its chief objects being the formation of a Natural History Museum. Roberts Leyland was one of the original members, a trustee, and Curator of Botany, until his death on November 15th, 1847. He was closely concerned in the growth of the Society and its Museum, having charge also of the shells, and forming collections of his own in conchology, mineralogy, and ornithology. Many of these went to the Museum at Akroydon, which Colonel Akroyd was instrumental in founding. Some relics are still in the possession of his grandson, Mr. John Leyland, who also retains some volumes of letters written to him by the botanists with whom he corresponded. He was much interested in the production of Baines' Yorkshire Flora, to which he lent considerable help and which was printed by Leyland & Son. His name also appears, as the authority for various Halifax plants, in the Topographical Botany of H. C. Watson, with whom he made exchanges.

But it was not till long after Leyland's death that the Museum in Harrison Road became possessed of a good botanical collection. In 1877 King presented his Herbarium, and the next year Col. Akroyd gave the Society the Herbarium formed by Roberts Leyland, and this was supplemented by the gift from F. A. Leyland of many more plants which had originally belonged to his father's collection. The duty of arranging these large collections fell to William Craven, who had been an original member of the Society and had succeeded Leyland in the Curatorship of Botany. This duty was completed by 1881, and the Curator was able to report to the Council of the Literary and Philosophical Society that the Leyland Herbarium contained 2,269 British Flowering Plants and Ferns presented by Col. Akroyd, and 675 by F. A. Leyland; also 150 British Lichens and 226 British Mosses from Col. Akroyd. Many of the plants are of course duplicates, "which have been retained in the Herbarium on account of the localities from which they are known to have been obtained." The Curator arranged them according to the Natural System, adopting the order of Hooker and Arnott's British Flora, the Herbarium containing specimens of almost

the whole of the British plants mentioned therein. The report for 1885, after Mr. Craven's death, speaks highly of the care and attention he bestowed on the arrangement of the specimens, "and the careful and methodical way in which they were catalogued, repaired and relabelled."

In 1896 all the collections in the Museum were presented by the Society to the town, and the Natural History specimens were transferred to Belle Vue, where Leyland's and the other Herbaria are placed in cabinets in the botanical room of the Museum. Though the largest of the three herbaria, it is exceeded in the number of local species by King's. Still there are about 270 flowering plants and ferns from the parish in Leyland's with the locality specified on the label, and a good many others merely stated to be 'frequent,' but clearly of his own gathering and not exchanges. These latter, however, have not been incorporated in this Flora, so that sometimes a very common plant is apparently unrecorded until recent years. Many of the specimens are also undated, but the majority are furnished with dates, the earliest being 1814 and the latest 1843. The plants are still in a good state of preservation, and some of them are no longer to be found growing within the parish.

A group of 'working-men naturalists' next claims attention, of whom Samuel Gibson, of Hebden Bridge, was perhaps the most notable and was somewhat the earliest, though they were all contemporaneous. As the details of his life and pursuits have been previously printed, there is more information available, but less necessity to repeat it all here.

**Samuel  
Gibson.**

The son of a whitesmith at Hebden Bridge, Samuel Gibson was born in 1789 or 1790, and was soon put to his father's trade, receiving no education except at a Sunday School. He married at 19, brought up a family of nine, and in later years had to give up his occupation as he was disabled by a fall. So for a time he established himself in a small inn at Mytholmroyd and fitted up a room as a Museum. But this failed to support him and he spent his last years in a cottage near the station, having to part with most of his natural history collections to keep his wife and himself. He died on May 21st, 1849, at the age of 59.

His enthusiasm for all branches of natural history is made evident in the chapter devoted to him in "Where there's a Will there's a Way: An Account of the Labours of Natural-

ists in *Humble Life*," by James Cash (1873). Geology, entomology, conchology, all claimed his attention as well as botany. He furnished geological material to Prof. Phillips, who named a new species after him *Goniatites Gibsoni*; and his collection of fossils, which was shown at the Manchester meeting of the British Association in 1842, was purchased for the Manchester Museum, and is now at Owens College. His collection of insects was sold after his death for £45 after being snapped up for as many shillings.

In botany he contributed largely to the literature of his time, especially on questions relating to the hawkweeds, sedges, and ferns. "To Mr. S. Gibson, of Hebden Bridge," writes Baines in the preface to his *Flora of Yorkshire*, "the Catalogue is under great obligations, not only for the free communications of his discoveries, especially in Cryptogamic Botany, but also for his attention to the general completeness of the Work." Edward Newman in his *History of British Ferns* frequently mentions the receipt of varieties from Gibson. But it is in the first volume of the 'Phytologist,' 1841-1844, that Gibson is most in evidence, almost every number containing some note, enquiry or paper by him, or a controversial discussion of his discoveries. Some of his conclusions have not been accepted, but there remain his variety *spinosa* of *Sagina procumbens*, and the variety *prostrata* (Bab.) of *S. apetala*, both found by him about Halifax. Gibson was also the first to find *Hieracium hypochæroides*, as he named it, or what Backhouse called *Hieracium Gibsoni*, at Malham, and a variety of *Carex Goodenowii*, which Babington named *Gibsoni*, at Hebden Bridge. His *Carex pseudo-paradoxa*, which involved him in a bitter controversy, is now known as *C. teretiuscula*, var. *Ehrhartiana*, whilst Newman adopted his name *nudum* for a variety of *Equisetum palustre* supplied by him.

Gibson left large botanical collections. Some appear to be lost now, but the Royal Museum, Peel Park, Salford, contains his collection of seeds and seed-vessels of British and Foreign plants, mounted between glass slips for examination under the microscope. His herbarium of British flowering plants, said to have been valued at £75, was purchased after his death by Mr. Mark Philips, M.P. for Manchester. I was fortunate enough a few years ago to trace it to the possession of his daughter, Lady Trevelyan, of Welcombe, Stratford-on-Avon, and shortly afterwards, Lady Trevelyan, acting on my suggestion, presented it to the Halifax Corporation, and it was

deposited in the Belle Vue Museum in 1897. This has enabled me to examine and re-arrange the herbarium, and to incorporate all the local records in this Flora. These represent about 230 species, gathered between 1823 and 1848. The specimens as a whole are in a fair state of preservation, but are not so well mounted, being merely preserved loose between sheets of paper, nor so well labelled as King's and Leyland's. The sedges are the best section, and the brambles are also well represented, but there are no ferns at all. A "List of Desiderata," which Gibson printed for purposes of exchange, shows by its shortness that the herbarium was then almost complete, and that it included the mosses in its scope as well, though none now belong to it.

The third herbarium at Belle Vue was formed by Samuel King. The youngest son of John King, he was born at Lane House, Midgley, on June 12th, 1810. Lane House was then a farm, on the road from Luddenden Foot to Luddenden, and John King also carried on there the manufacture of plush cloth by hand loom. Samuel King looked after the farm in his younger days, but being passionately fond of flowers and wild plants, he made a nursery garden between the house and the brook, and used to show herbaceous and alpine plants at the flower show at Pye Nest. At one time he was gardener at the Hollins, Warley, when tulips were still in favour, and the collection under his care was a valuable one. The nursery at Lane House he handed over to his nephews, William and Charles Eastwood, in the year 1860, as he was becoming incapacitated for work through failing eyesight. Eventually he became blind, but in spite of this he remained for many years minister at Butts Green Baptist Chapel, Warley.

Shortly after giving up the nursery King went to live at Bank Bottom, Luddenden. In 1865 he was elected a pensioner of the Halifax Tradesmen's Benevolent Institution, and this ultimately led to his Herbarium being presented by him to the Halifax Literary and Philosophical Society. The following letter, signed by him, accompanied the gift, and explains the arrangement of the Herbarium.

Bank Bottom, Luddenden,

Nov. 21st, /76.

To the President and Council of the Halifax Literary and Philosophical Society.

Gentlemen,

As a token of gratitude to the Ladies and Gentlemen of the Halifax



Tradesmen's Benevolent Institution, I beg to present to you my Herbarium Britannicum, to be deposited in the Halifax Museum for the benefit of the Scientific, where I trust it will be well cared for.

Accompanying the Herbarium is an interleaved copy of Baines' "Flora of Yorkshire," also a volume of the "Phytologist," in which at page 585 is a description of the Herbarium, and which description should be read by anyone wishing to examine it. When examining any of the Vols. care should be taken to turn over by the blue leaves as the white ones are loose.

The six Fascicles placed on the shelf are a fragment of a collection intended to be arranged according to the natural arrangement; not having been able to carry out that work the specimens are put in fascicles according to the Linnæan system, and numbered to correspond with the Vols. of the Herbarium. To reduce the bulk of Vol. 6 the genus 'Salix' has been removed to fascicle no. 6.

The accompanying Catalogues show the contents of the Vols. Those species not dotted being desiderata have spaces and labels left for them in the Vols. Duplicates are occasionally placed behind the sheet on which the species is mounted.

Corrosive sublimate of mercury was used in preparing the specimens.

I am, Gentlemen,

Yours faithfully,

SAMUEL KING.

According to the report of the Literary and Philosophical Society for 1877, the Herbarium contained 1,450 British Plants in the six volumes, and 360 duplicates in the fascicles. The arrangement of it remains undisturbed, and the specimens are in an excellent state of preservation. There are about 500 entries of local plants, collected between 1829 and 1856, though very few were added after 1844.

King contributed to Miall's Flora of the West Riding; and a rose sent by him from Luddenden to Mr. J. G. Baker in 1862 was named *R. cryptopoda*, and does not appear to have been reported again. But King's chief contribution to the botanical literature of the parish was a paper in the Phytologist—"List of Plants observed in the dried-up bed of a Wear on Luddenden-brook, in July, 1844." Some of these he explains, were undoubtedly escapes from the sweepings of the corn-mill a few hundred yards higher up the stream. But the majority of the hundred or more enumerated are just such as might be found there to-day. The only exceptions are the primrose and yellow archangel, whose disappearance is the only evidence of any changes brought about in more than half a century.

Samuel King died on January 10th, 1888, and was interred at Butts Green Chapel, Warley. I am indebted to his nephew Mr. John King, of Halifax, for many personal details of his life.

Associated with King was his nephew Charles Eastwood. Born at Halifax in 1839, but brought up with his uncle, he soon as a boy took an interest in botany, and **Charles Eastwood.** assisted King in mounting and labelling his specimens. From sixteen to eighteen he was a gardener at Stansfield Hall, and became a member of the Todmorden Botanical Society. Then for two years he was employed at Kew Gardens, after which he returned to Luddenden and took up the Lane House nurseries. He died on December 21st, 1895. His name frequently appears as the authority for Halifax plants in Miall's Flora.

Going back somewhat, we find a number of active botanists at Todmorden, of whom John Nowell was the most eminent.

He was born at Springs, near Harley Wood, in **John Nowell.** 1802. At a very early age he was employed as a winder, at nine he began to weave, and afterwards became a twister-in, and remained such until his death. His love for botany was first acquired from Edmund Holt, of Lumbutts, the father of the Todmorden School of Botanists, and such education as he received was mostly gained from a grammar class at Shore Chapel, taught by the Rev. John Midgley. He died October 28th, 1867, at White Hart Fold, and was interred at Cross-stone Church. A monument was erected to his memory in the old Church-yard at Todmorden by his fellow botanists. The *Manchester Guardian* for November 5th, 1867, contains an account of his labours, and Mr. Abraham Stansfield, jun., devotes a chapter "A Lancashire Moss Gatherer" to him in his "Essays and Sketches." His portrait has been recently hung in the Todmorden Free Library, which also contains his collection of mosses numbering 469 species, of which 147 are local ones. The duplicate specimens were, unfortunately, destroyed.

Nowell was one of the ablest students of mosses that Yorkshire ever produced. All the Floras of Yorkshire and the West Riding bear witness to his industrious and successful search for mosses, not only in the productive cloughs between Todmorden and Hebden Bridge, but over a much wider field, and his early discoveries have been amply confirmed. In 1836 he added the rare moss *Cinclidium stygium* to the British Flora,

finding it near Malham Tarn, when in the company of two other Todmorden botanists, John Howarth and William Greenwood. These three, and also Gibson, contributed numerous species to the list of mosses in Baines' Flora of Yorkshire, and when this was re-written by Mr. J. G. Baker in 1854, Nowell was entrusted with the production of the second part of the "Supplement" dealing with the mosses of the county. His help is again acknowledged in the Flora of the West Riding (1862), where in the Introduction to the Cryptogamia, Dr. Carrington writes:—"To my friend, Mr. J. Nowell, of Todmorden, I owe special thanks. There are few districts of Yorkshire, or the adjacent counties, with the varieties of which he has not become acquainted during his long and useful life, and I paid my first visit to many of the stations recorded below under his guidance."

Nowell enjoyed the friendship of most of the bryologists of his day. He was visited at Todmorden by Dr. Schimper, of Strassburg, and his correspondence with W. Wilson is preserved in the Botanical Department of the British Museum. The generic name *Nowellia* was chosen in his honour.

The Todmorden Botanical Society was founded in 1852 mainly by the efforts of John Nowell and Abraham Stansfield, the latter being the first President. Abraham **Abraham Stansfield** was born January 12th, 1802, at **Stansfield**. Hudgeon Croft near Shore, in Stansfield, and after a short time spent at a day school in Shore he went to weave. Removing to Stones-bottom he became acquainted with Nowell. Some verses written by him attracted the attention of Mr. Ramsbottom of Centre Vale, and led to his being appointed gardener at Centre Vale. In 1844 he started as a nurseryman on his own account at Vale Gardens, Todmorden, and after some years took his sons, Thomas and Abraham, into partnership. The Stansfields devoted their attention to varieties of British Ferns, and built up both a reputation and a large business in that line. Judging from the many varieties of ferns enumerated by them in Miall and Carrington's Flora, their cultivated forms must have been largely derived from the varieties to be obtained so abundantly in the Vale of Todmorden. The father contributed a chapter on botany to "A History of the Forest of Rossendale" (1868). He died on August 15th, 1880, at Todmorden, in Cheshire, and there is a memorial notice of him in the *Gardeners' Chronicle* for 1880, ii. 283, and another account in

the Todmorden and Hebden Bridge Historical Almanack for 1882.

In 1896 the Todmorden Botanical Society, of which Mr. Abraham Stansfield, jun., was then President, presented its library and collections to the District Council. These are now housed in the Todmorden Free Library, and include Nowell's mosses mentioned above, and a set of 'British Ferns arranged by A. Stansfield.' The latter contains over 200 specimens including a great many cultivated varieties. A portrait of Stansfield has also been placed in the Library.

The Working Men's College at Haley Hill, founded by Colonel Akroyd, greatly promoted the study of natural history in Halifax, thirty or forty years ago. The **John Walker.** Haley Hill Literary and Scientific Society was an offshoot of the College, founded about 1860, and the establishment of the Ovenden Naturalists' Society in 1865 may be looked upon as another indication of the same eager pursuit of natural history.

The Haley Hill Society circulated a paper amongst its members, and when, in 1866, it ventured to print these contributions, the "Monthly Magazine of Literature, Science and Art," which resulted, was named the "Circulator." This was published by R. Leyland & Son, and sold at twopence a number, and it continued to appear for about two years. In the "Circulator," commencing with page 101, appeared a series of articles under the head of "Botany," which gave substantially a list of the flowering plants and ferns found in Shibden, with a few others found elsewhere in the parish. These are only signed "J. W." until the conclusion, when the author signs himself Jno. Walker, Akroydon, and "acknowledges with pleasure his obligations to Mr. James Whiteley, of Shibden Head, and to Mr. B. Barber, of Woodside Lodge, for the information which they have kindly rendered concerning some of the localities mentioned."

The author of this list, John Walker, was a native of Boothtown, Halifax, and was born June 24th, 1839. He was brought up in the worsted trade, and about 1880 started business on his own account as a worsted manufacturer at Claremount, residing at Lee House, Shibden. About ten years later he removed to larger premises at Norwood Green, and went to live at Coley Mill House, where he died on May 16th, 1895, and was interred at the Lister Lane Cemetery, Halifax.

The list enumerates rather more than 300 plants, and is thoroughly representative. It contains a few mistakes, some of which have been detected by being repeated in a small collection of plants, formed by J. Walker in 1862, which is now in the botanical room at Belle Vue Museum.

The Halifax Scientific Society had its origin in 1874, in a course of University Extension Lectures on Geology, by Prof. W. J. Sollas, F.R.S., and was for a time known as the Halifax Geologists' Field Club. It was not till 1886 or 1887 that a Botanical Section was established in connection with the Society, and the prime movers in its foundation still happily remain associated with the Natural History Section, as it is now called.

But any sketch of deceased Halifax botanists would be incomplete which did not make mention of Henry Thomas Soppitt, though he was only a member of the Society for five years, joining it when he took up his residence in Halifax, in 1894. He had then for years been recognised as one of the ablest botanists in Yorkshire, and he soon took a keen interest in the Halifax Flora, especially in his own branch of the fungi.

Passing by his additions to the list of fungi, and records of mosses, some of which are to be found in the annual reports in the *Halifax Naturalist*, he was the first to record in recent years *Sisymbrium Thalianum*, *Epilobium roseum*, *Ceratophyllum demersum*, *Potamogeton pusillus*, *P. pectinatus*, and *Festuca sylvatica* amongst the flowering plants.

Other phases of Soppitt's activities, especially his experimental researches on the microscopic fungi, have been dealt with in the obituary notices which appeared in the *Gardeners' Chronicle* (April 15, 1899, p. 239), the *Naturalist* for May, 1899, and the *Halifax Naturalist*, Vol. IV., pp. 31-36. Born at Bradford on June 21st, 1858, he died at Halifax on the first of April, 1899. His name has been utilised by Mr. Massee to designate a new genus *Soppittiella*, and a new species *Dasyscypha Soppittii*, and Mr. Crossland has named a species *Thielavia Soppittii*, so that his name will always be associated with the parish he came to love so well. His botanical collections and books have been purchased by members of the Yorkshire Naturalists' Union for presentation to the Union, to form the nucleus of a Soppitt Memorial Library of Mycological Literature.



## CHAPTER IV.

### Bibliography.

A CHRONOLOGICAL LIST OF BOOKS AND PAPERS RELATING TO  
THE BOTANY OF THE PARISH OF HALIFAX.

1562. William Turner's Herball, Pt II., 109.  
1666. Pinax Rerum Naturalium Britannicarum, by Christopher Merrett.  
1670. Catalogus Plantarum Angliæ...Op. Joannis Raii.  
1724. Synopsis Methodica Stirpium Brit., Auct. J. Raio Ed. iii., by J. J. Dillenius.  
1763. Plantæ Cantabrigienses, by T. Martyn.  
1775. History and Antiquities of the Parish of Halifax, by John Watson; A Catalogue of Plants growing in the Parish of Halifax, pp. 729-764.  
1785-1790. Filices Britannicæ, by James Bolton, 2 vols.  
1788-1791. An History of Fungusses growing about Halifax, by James Bolton, 4 vols.  
1805. Botanist's Guide through England and Wales, by Dawson Turner and L. W. Dillwyn. Vol. II., pp. 661-745.  
1835. New Botanist's Guide to the Localities of the Rarer Plants of Britain, by H. C. Watson.  
1840. Flora of Yorkshire, by Henry Baines.  
1841-1844. Phytologist: A popular Botanical Miscellany, Vol I. On British Species and Varieties of the Genus *Sagina*, by Samuel Gibson, pp. 177-179. On the Arrangement of a Herbarium, by Samuel King, pp. 585-586. Plants observed in the Vale of Calder, by S. Gibson, p. 773. Note on *Cynosurus echinatus*, by S. Gibson, p. 815. List of Plants observed in the dried-up bed of a Wear on Lud-denden-brook in July 1844, by King, pp. 1096-1098, &c. &c.  
1845. A List of Plants used by The Halifax Medical Botanic Society; stating the times when they flower, and the places where they grow. Halifax: Printed by Nicholson and Wilson, Cheapside, 1845. [8 pp.  $5\frac{1}{4} \times 3\frac{1}{2}$  ins.]  
1854. Supplement to Baines' Flora of Yorkshire, by J. G. Baker and John Nowell.  
1862. Flora of the West Riding, by L. C. Miall and B. Carrington.

1867. The Circulator, a Monthly Magazine of Literature, Science and Art, conducted by members of the Haley Hill Literary and Scientific Society. Halifax: Leyland and Son. It contains, divided into four portions under the title Botany—"A List of Plants chiefly observed in Shibden by Jno. Walker, Akroydon, with assistance from Mr. James Whiteley, of Shibden Head, and Mr. B. Barber, of Woodside Lodge."
1868. Huddersfield: its History and Natural History, by Chas. P. Hobkirk. 2nd Edition.
1869. The British Rubi, by C. C. Babington.
1873. Where there's a Will there's a Way, or Science in the Cottage. An account of the Labours of Naturalists in Humble Life, by James Cash. [Samuel Gibson, of Hebden Bridge, pp. 157-164.]
- 1873-4. Topographical Botany; by H. C. Watson. 2nd Edition, 1883. Local correspondents S. Gibson and Roberts Leyland.
1878. West Yorkshire: An account of its Geology, Physical Geography and Botany, by J. W. Davis and F. A. Lees.
1883. Huddersfield Fungi, by A. Clarke; Huddersfield Botanical Soc., Circular.
1886. British Pyrenomycetes, by G. Masee; Grevillea, vol. xv., pp. 4 and 34.
1887. British Hyphomycetes, by M. C. Cooke; Grevillea, xvi., pp. 58 and 61.
1888. The Flora of West Yorkshire, by F. Arnold Lees.
1889. *Geranium macrorrhizum* and *Carex Gibsoni* in West Yorkshire, by Arthur Bennett; Naturalist, p. 80.
- *Cylindrospermum macrospermum* near Halifax, by C. Crossland; Naturalist, p. 339.
1890. Fungi new to West Yorkshire, by C. Crossland; Naturalist, p. 356, and Jan. 1891, p. 20.
1891. New British Fungi, by M. C. Cooke; Grevillea, vol. xx. p. 38.
- Volvox* in Yorkshire, by Thomas Hick; Naturalist, pp. 167-170.
- Additions to the Fresh-water Algæ of West Yorkshire, by Wm. West; Naturalist, pp. 243-252.
- Fungus Foray at Doncaster (includes some Halifax species), by H. T. Soppitt; Naturalist, pp. 339-348.
1892. New West Yorkshire Fungi, by C. Crossland; Naturalist, pp. 261-268.

- New and Rare Fungi near Halifax, by C. Crossland ;  
Naturalist, pp. 371-372.
- New or Critical British Fungi, by G. Masee ; Grevillea,  
xxi., pp. 7, 41, and 121.
- 1892-5. British Fungus-Flora, by George Masee, 4 vols.
1893. Biographical Index of British and Irish Botanists, by J.  
Britten and G. S. Boulger.
- New British Fungi, by M. C. Cooke ; Grevillea, vol. xxi.,  
pp. 69-73.
- New or Critical British Fungi, by G. Masee ; Grevillea,  
vol. xxii., pp. 42 and 44.
- Some Observations on *Puccinia Bistorta*, by H. T. Soppitt ;  
Grevillea, vol. xxii., pp. 45-47.
- Remarks on the Huddersfield Flora, by T. W. Woodhead ;  
Monthly Circular, Hudd. Nat. Soc., No. 45, pp. 111-  
120.
1894. Guide to Hardcastle Crag, Hebden Bridge and Neigh-  
bourhood. 2nd Edition. List of Flowering Plants,  
Mosses, Ferns, &c., by J. Needham, pp. 46-51.
- Additions to the West Riding Fungus Flora, by Charles  
Crossland ; Naturalist, pp. 165-172.
1895. A Lowland Sand-loving Gentian, by F. A. Lees ;  
Naturalist, pp. 225-228.
- Botanical Notes from Hebden Bridge, by Rev. Wm.  
Fowler ; Naturalist, p. 238.
1896. New or Critical Fungi, by G. Masee ; Jour. of Botany,  
xxxiv., p. 154, pl. 357, figs. 21-24.
1897. First Records of British Flowering Plants, by W. A.  
Clarke. (See *Quercus* and *Arctostaphylos*).
- A Winter Ramble in search of Mosses in the Hebden  
Valley, by H. T. Soppitt ; Hx. Nat. I., pp. 91-93, and  
II., p. 14.
- Annual Report of the Botanical Section (of the Halifax  
Scientific Society, for 1896), Hx. Nat. I., pp. 96-98.
- Jubula Hutchinsiae* : A rare Hepatic, new to Yorkshire, by  
M. B. Slater ; Naturalist, p. 128.
- A New Yorkshire Hepatic, by James Needham ; Hx.  
Nat., II., p. 17.
- A New British Fungus, by C. Crossland ; Hx. Nat., II.,  
p. 58.
1898. A Remarkable Parasite, *Puccinia Bistorta*, by H. T.  
Soppitt ; Hx. Nat. II., p. 108-113.

- Notes on "A List of Herbs used by the Halifax Botanic Society," by Rev. Wm. Fowler; Hx. Nat., II., p. 113-115.
- Annual Report of the Botanical Section (of the Halifax Scientific Society, for 1897); Halifax Nat., II., pp. 122-124.
- Amblystegium aduncum* var. *plumulosum* added to the Yorkshire Moss-Flora, by J. Needham; Naturalist, p. 115; Hx. Nat., III. p. 18.
- Facts and Factors in the Distribution of Halifax Plants, by W. B. Crump; Hx. Nat., III., pp. 43-44, 62-66.
- Green Scums, by C. E. Moss, Hx. Nat., III, pp. 79-81.
- A Fungus Foray in Luddenden Dean, by U. Bairstow; Hx. Nat. III, pp. 84-85.
- Mollisia cinerea* (Batsch) and its varieties, by C. Crossland, Trans. Brit. Mycological Soc., Part III., pp. 106-9.
- Sur deux nouvelles espèces d'Ascobolés, par M. Boudier; Bulletin de la Soc. Myc. de France, xiv., p. 125.
1899. New British Fungi found in West Yorkshire, by H. T. Soppitt and C. Crossland; Naturalist, pp. 27-31.
- Local Records in Natural History (Report for 1898), Botany; Hx. Nat., III., pp. 127-128.
- In Memoriam: Henry Thomas Soppitt, by A. H. Pawson; Naturalist, pp. 157-160; by C. Crossland, Hx. Nat., IV., pp. 31-36.
- On the Position of *Crocus nudiflorus* in the English Flora, by W. B. Crump; Hx. Nat., IV., pp. 21-26.
- The Life-History of the Autumn Crocus, by C. E. Moss; Hx. Nat., IV., pp. 66-72.
- Field Work; Hx. Nat., IV., pp. 18, 39, 79, 100.
1900. New and Critical British Fungi found in West Yorkshire, by C. Crossland; Naturalist, pp. 5-10.
- Local Records in Natural History (Report for 1899)—Botany; Halifax Naturalist, iv. pp. 112-114.
- A Spring Chronicle, by W. B. Crump; Hx. Naturalist, V. pp. 15-17.
- Changes in the Halifax Flora during the last Century and a Quarter, by C. E. Moss; Naturalist, pp. 165-172.
- In Defence of James Bolton, the Fungologist, by F. A. Lees; Naturalist, pp. 225-226.
- The Volteface of Flora: a Rejoinder, by F. A. Lees; Naturalist, pp. 229-236.

- Yorkshire Bryological Committee: Report for 1899; Naturalist, pp. 237-239.
- Norland Clough: Plant Life, by C. E. Moss; Halifax Naturalist, V. pp. 41-45: Its Fungi, by C. Crossland. *Ibid* pp. 102-107.
- A Neglected Corner, by W. H. Cooke; Hx. Naturalist, V., pp. 57-58, 77.
1901. The Alga-Flora of Yorkshire, by W. West and G. S. West: Trans. Y.N.U., Pts. 22, 23, 25, 27.
- Local Records in Natural History (Annual Report for 1900) Botany, by W. B. Crump and C. Crossland; Halifax Naturalist, V. pp. 117-120.
- Yorkshire Bryological Committee: Report for 1900; Naturalist, pp. 65-67.
- Changes in the Halifax Flora during the last Century and a Quarter, 2nd paper, by C. E. Moss; Naturalist, pp. 99-107.
- New British Discomycetes, Part I., by G. Masee and C. Crossland; Naturalist, pp. 177-189.
- Iris sibirica* in Tag Lock, by W. B. Crump; Halifax Naturalist, VI. p. 64.
- A Sedge Rediscovered, by W. B. Crump; Halifax Naturalist, VI. p. 92.
1902. Local Records in Natural History (Annual Report for 1901) Botany, by W. B. Crump and C. Crossland; Halifax Naturalist, VI. pp. 123-125.
- The North of England Harpidia, by J. A. Wheldon; Naturalist, pp. 65-92.
- Flowering Plants of Tag Lock, by T. Halstead; Halifax Naturalist, VII. pp. 13-16.
- The Halifax Autumnal Gentians, by W. B. Crump; Halifax Naturalist, VII. pp. 72-74.
- North of England Plants in the Motley Herbarium at Swansea, by Rev. H. J. Riddelsdell; Naturalist, pp. 343-351. [See *Cornus suecica*].
- Moors of South-west Yorkshire, by C. E. Moss; Halifax Naturalist, VII, pp. 88-94.
1903. Local Records in Natural History, 1902; Botany, by W. B. Crump and C. Crossland; Hx. Nat., VII., 107-110.
- Geographical Distribution of Vegetation in Yorkshire. Part I., Leeds and Halifax District, (with coloured map and illustrations), by Wm. G. Smith and C. E.



Moss ; Geographical Journal, xxi. pp. 375-401. Pocket Edition, J. Bartholomew & Co., Edinburgh.

Woodland Studies, by C. Crossland and J. Needham.

i. Flora of a Boulder in March ; Hx. Nat., VIII., pp. 8-10.

ii. Flora of a Stream Course ; *id.* VIII., pp. 45-47.

The Distribution and Associations of Mosses and Hepatics in the Parish of Halifax, by C. Crossland ; Hx. Nat., VIII., pp. 66-72.

1904. New Fungi, contributed by the Mycological Members of the Union ; Naturalist, pp. 1-8.

Local Records in Natural History, 1903 ; Botany, by W. B. Crump and C. Crossland ; Hx. Nat., VIII. pp. 87-90.

Peat Moors of the Pennines : their Age, Origin and Utilization, by C. E. Moss ; Geographical Journal, xxiii.

## CHAPTER V.

### Plan of the Flora.

**T**HE Flora (pages 1-144) is arranged in accordance with the ninth edition (1895) of the "London Catalogue of British Plants."

i.—The botanical name (as given in the Catalogue, with one or two exceptions) is placed first in heavy type, and after it the authority for the name, in the usual abbreviated form (e.g., L. = Linneus). When the plant is an alien, its name is printed in italics. Entries of species which are considered to be now extinct, or to have been erroneously recorded, are placed within square brackets [ ].

ii.—The 'census number' that follows each name indicates in how many Watsonian vice-counties the plant is found in a native or quasi-native state. In order to arrive at a more exact knowledge of the distribution of British plants, H. C. Watson divided Great Britain into 112 botanical areas (vice-counties) more uniform in size than the counties. Yorkshire includes five of these vice-counties, and the whole of the parish of Halifax lies in No. 63. The census numbers (revised to 1895) therefore show at a glance the comparative frequency or rarity of each plant in Great Britain; the maximum being, of course, 112.

iii.—As there were many changes made in the names of species in the ninth edition of the Catalogue, it has been necessary to add in some cases the more familiar ones employed in Hooker's 'Student's Flora.' These synonyms come next, and are printed in ordinary type, to avoid confusion with aliens, printed in italics. As this objection does not apply in Mr. Crossland's section, synonyms are there printed in italics, from page 151 onwards.

iv.—The English names that follow are those in common use, either by collectors or more generally, and they include a few local names.

v.—The status of the plants, or their rank of citizenship, is given at the commencement of the second line. To determine this is often a problem of the greatest difficulty, and whilst

botanists have accepted the principles set forth in Watson's "Cybele Britannica" and the "Compendium," their local application is sometimes more a matter of conjecture than of certainty: "The terms, Native, Denizen; Colonist, Alien and Casual, serve to express a descending series, from the truly wild and pre-historically established species, down to the occasional stragglers from cultivation, or the products of seeds accidentally imported with merchandise, ship-ballast, or otherwise." Mr. Watson proceeds to define these terms as follows:—

(a) NATIVE—"Apparently an aboriginal British species."

(b) DENIZEN—"At present maintaining its habitats as if a native species, without the direct aid of man, but liable to some suspicion of having been originally introduced by human agency, whether by design or accident."

(c) COLONIST—"A weed of cultivated land, by road sides, or about houses, and seldom found except in places where the ground has been adapted for its production and continuance by the operations of man; with a tendency in some of them to appear on the shores, landslips, and in what are called 'waste places.'"

(d) ALIEN—"Presumably introduced by human agency."

(e) CASUAL—"Chance stragglers from cultivation; those occasionally imported and sown with agricultural seeds; those introduced among wool, oil-seeds, or other merchandise; foreign plants found on ballast heaps deposited from ships; and generally such alien species as are most uncertain in place and persistence."

These definitions have been strictly adhered to, though the application of them may be faulty at times. In practice the classes shade off into one another; e.g., some species may be regarded either as denizens or aliens; others either as colonists or casuals; again, the term alien or casual may often be used indifferently. The rank assigned to any species here has, of course, exclusive reference to its existence in the parish of Halifax. Necessarily it cannot have a higher rank than in Britain as a whole, so Watson's decision must be accepted as an upward limit; but it may have a lower rank, and in fact cases frequently occur where species truly native elsewhere in Britain are not native, but only denizens, casuals, etc., in this district. Occasionally the addition of a note of interrogation or an alternative denotes uncertainty at the time of compiling the list. Longer experience would now lead me, in almost

every case, to assign the species the lower rank, and to interpret the query as a negation.

In order to distinguish clearly between the more essential constituents of the Flora, and the accidental, the names and synonyms of all *aliens*, whether called such, or casuals, garden escapes, or introductions, are printed in *italics*. If a census-number follows a name in italics, it shows that the species is more truly native elsewhere in Britain. But if the number is wanting, the species is regarded nowhere as more than an alien. The main list does not include any plants that are not mentioned in the London Catalogue, such foreign species as have occurred being relegated to the Appendix.

vi.—The next particular, also due to H. C. Watson, is intended to show the distribution of the plants in Britain as a whole, or in which part of the island each species is most prevalent. An explanation of these ‘types’ has already been given in Chapter II., page xxiv.

vii.—The duration of the plant, whether Annual, Biennial, or Perennial, is indicated by the abbreviations A, B, and P respectively. The terms Shrub and Tree are also employed.

viii.—The last specific item is a statement of the months when the plant is in flower, or otherwise in a suitable state for identification. In the case of at least all the commoner flowers the data are based on local observations.

ix.—Then there follows a list, in chronological order, of all the published or accessible records of the occurrence of each plant within the parish. The admirable “Flora of the West Riding,” by F. Arnold Lees was the quarry which provided the foundations of this list. But as the present work also includes many additional records of local botanists during the last sixty years, perhaps these contributions to a more exact knowledge of the West Riding Flora will repay the indebtedness. Particulars of every source of information will be found in Chapter III; and the origin of every record can be at once traced, if it is not apparent, by reference to the corresponding year in the Bibliography (Chapter IV.) When the record is based on a herbarium specimen, it is clearly indicated; the date in this case will vary considerably, or may be wanting. The name of the authority for the record is put in italics; in the case of some few oft quoted names initials are substituted, or the name abbreviated, but not invariably.

x.—The last paragraph describes our knowledge of the occurrence and distribution of the plant at the present day.

No system of artificial divisions of the parish has been adopted, but every care has been taken to present concisely as faithful a picture as possible of its habitat, range and abundance. The usual terms employed are: Very common, common, infrequent, rare, and very rare, representing a diminishing sequence. 'Frequent,' when used, represents a stage between 'common' and 'infrequent.' Next the habitat is given, and lastly, except in the case of the commonest plants, either all the stations in which the species has been observed since 1885, or a sufficient number of them to indicate its range. A word as to the system of punctuation is necessary. "Sun Wood, Walter Clough, Ogden, Norland," represent as many separate localities. But where a less known locality is given it is often supplemented by the name of the township, &c., and then a semicolon is employed to separate the stations, *e.g.*, "Tag Lock, Elland; Willow Wood, Sowerby; Broadhead Wood, Erringden," enumerates three places only.

The stations in this last paragraph are based on the records of the Botanical (now Natural History) Section of the Halifax Scientific Society, of which I have been custodian since 1893. As a rule no personal authority is mentioned for these; indeed, it would be difficult to do so. Nor have I made use of any sign to denote my own personal knowledge of a species or its stations, for there are very few cases in which I have not seen both. But I could not omit to mention the names of some of the members who have contributed to the common fund, for it is only by their sustained interest in the botany of the parish that the list attains its completeness. Messrs. J. T. Aspin, U. Bairstow, J. H. Bolton, W. H. Cooke, C. Crossland, and J. Wms. Sutcliffe, have all been closely associated with the work of the Section, and Mr. J. Whiteley links this with the last list of plants, that in the Circulator. Help has also been freely rendered by Mr. J. Needham, of Hebden Bridge, and the members of the Ovenden, Elland, and West Vale Naturalists' Societies. To Mr. C. E. Moss I am especially indebted for many suggestions whilst the Flora has been passing through the press, in addition to much information with regard to the sedges, grasses, &c. The late Mr. H. T. Soppitt also took a deep interest in the production of the Flora, and brought his extensive experience and keen perception to bear upon local problems with great success.



## ABBREVIATIONS.

- A. Annual.  
 B. Biennial.  
 P. Perennial.  
*J.B.* James Bolton 'Catalogue of Plants,' 1775.  
*S.K.* S. King, 'List of Plants,' *Phytologist*, 1844.  
*J.W.* J. Walker, List in *Circulator*, 1867.  
*Herb. S.K.* Herbarium of S. King.  
*Herb. Gibs.* Herbarium of S. Gibson.  
*Herb. Leyl.* Herbarium of R. Leyland.  
*Med. Bot. Soc.* Medical Botanic Society, List 1845.  
*Fil. Brit.* J. Bolton's *Filices Britannicæ*, 1785  
*Fl. or Flo.* Flora.  
*Y.N.U.* Yorkshire Naturalists' Union.  
 [ ]. The record erroneous, or the species extinct.

## ADDITIONAL ABBREVIATIONS.

MUSCI AND HEPATICÆ. See page 150.

LICHENES.

*J.A.M.* J. A. Martindale.

*J.N.* or *J.Ndm.* J. Needham.

*A.S.* A. Stansfield in Lees' Flora.

*T.S.* T. Stansfield „ „

ALGÆ. See page 229.

FUNGI. See page 240.

## Summary of Species Recorded.

	Recently.	Not Recently.	Doubtful.	Total.
Flowering Plants :				
Natives ... ..	411	40	...	451
Denizens ... ..	23	6	...	29
Colonists ... ..	55	4	...	59
Aliens and Casuals	145	39	...	184
Incognita, &c. ...	...	...	23	23
Total ... ..	634	89	23	746
Ferns and Allies ...	29	6	3	38
Mosses ... ..	169	62	20	251
Hepatics ... ..	51	16	2	69
Lichens ... ..	48	40	7	95
Algæ ... ..	212	0	0	212
Fungi ... ..	1150	71	4	1225
Total ... ..	2293	284	59	2636

In the 'Doubtful' column are placed Errors, certain or probable, Incognita or uncertainties, as well as species the stations for which lie or may lie outside the parish boundary, and the general residuum which remains incapable of further treatment.

Of the species not recently recorded, many are no doubt extinct, especially in some classes. It is equally certain that all of them are not.



# THE FLORA

OF THE

## PARISH OF HALIFAX.

### RANUNCULACEÆ

[**Thalictrum flavum**, L.—69. Meadow Rue.

Native, extinct. English type. P. July.

1775. In a meadow at Thornhill Brigs, near Brighouse.—  
*J.B.*

The only record in the Calder valley.]

**Anemone nemorosa**, L.—108. Wood Anemone.

Native. British type. P. March-May.

1775. Steps Wood in Warley, Allen's Wood in Norland,  
and on every side of Halifax town.—*J.B.*

1844. Luddenden Brook.—*S.K.* 1867. Shibden.—*J.W.*

Common in all the damp woods.

**Adonis autumnalis**, L. Pheasant's Eye.

Alien. A. June-August.

1862. Near Brighouse.—*Miall's Flora.*

Found occasionally on waste ground about Elland.

**Ranunculus Lenormandi**. Schultz—54.

Native. English type. P. May-August.

1877. Norland Moor.—*H. F. Parsons* and *F. A. Lees.*

Common in shallow water on or near the moors, as Maple  
Dean Clough, Norland Moor, Rishworth, Cragg Vale,  
Crimsworth Dean, Widdop and Ogden. Its lowest  
station is Copley. In Norland Stream it flowers almost  
throughout the winter.

**Ranunculus hederaceus**, L.—105. Ivy-leaved Crowfoot.

Native. British type. P. May-August.

[1862. Norland, Southowram; *Miall's Flora.*]

[1867. Shibden Head, Ogden.—*J. W.*]

Rare, in ditches and ponds. The preceding records refer, no doubt, to *R. Lenormandi*, which is much the commoner species here. *R. hederaceus* was found in 1895 below Ogden reservoir; in some abundance in Bogden Clough, Rishworth; and sparingly in Fixby Park.

*Ranunculus sceleratus*, L.—100.

Alien. British type. P. June-August.

1841. Well Head garden. Came up among other plants from seed.—*Herb. S. K.*

[1862. Greetland Dean.—*Miall's Flora.*]

Not since observed, nor is this lowland species likely to be found as a native here.

**Ranunculus Flammula**, L.—112. Lesser Spearwort.

Native. British type. P. June-September.

1862. Norland; near Southowram.—*Miall's Flora.*

1867. Upper Shibden; Ogden.—*J. W.*

1888. Todmorden.—*A. Stansfield.*

Common in wet places: Shibden, Walter Clough, Copley, Barkisland, Rishworth, Crimsworth, Luddenden Dean, Ogden, &c.

Var. **pseudo-reptans**.—Syme.

1840. Castle Carr.—*Herb. S. K.* (as *reptans*).

1888. Gorple Water.—*F. A. Lees.*

**Ranunculus auricomus**, L.—87. Goldilocks.

Native. British type. P. April-May.

1775. Strang-stry Wood, near Rastrick, a wood near Coley, Common wood near Mytholm, in Hipperholme.—*J. B.*

1840. Norland.—*W(iddup) L(ord)*, *Herb. S. K.*

1867. Shibden, common.—*J. W.*

Infrequent and sparingly in woods and hedge sides: Lightcliffe, Walter Clough, Elland Park Wood, Norland Clough, Luddenden Dean

**Ranunculus acris**, L.—112. Buttercup.

Native. British type. P. April-October.

1844. Luddenden Brook.—*S. K.* 1867. Shibden.—*J. W.*

Very common in fields.

**Ranunculus repens**, L.—112. Buttercup.

Native. British type. P. May-October.



1844. Luddenden Brook.—*S. K.* 1867. Shibden.—*J. W.*  
Very common in wet and waste ground, &c.

**Ranunculus bulbosus**, L.—102. Buttercup.

Native. British type. P. May-July.

1775. All the fields about Lower Willow Hall, in Skircoat. It is double in some fields about Well Head, near Halifax.—*J. B.*

1867. Shibden.—*J. W.*

Frequent in meadows. The double form is common near Watkinson Hall, Ovenden.

**Ranunculus arvensis**, L.—68.

Colonist. English type. A. May-July.

1832. Lane House garden, Luddenden; also near Halifax.—*Herb. S. K.*

1840. Lightcliffe and Hipperholme.—*Baines' Flora.*

Rare, and more a casual on mill refuse, as at Sterne Mill, Elland, and Tag Lock, than as a colonist in cornfields at Shibden.

**Ranunculus Ficaria**, L.—110. Pilewort, Lesser Celandine.

Native. British type. P. March-May.

1775. Warley Clough, and in many fields near Halifax. Sometimes with a double flower which produces seeds.—*J. B.*

1844. Lane House Farm.—*Herb. S. K.*

1867. Shibden.—*J. W.*

Very common in damp woods, hedge banks, and fields.

**Caltha palustris**, L.—112. Marsh Marigold, "Water Blobs," "King Cups."

Native. British type. P. March-May.

1775. In the meadows about Salterhebble and Bankhouse in Skircoat, and in several marshy places about Warley Clough. Sometimes found with double flowers.—*J. B.*

1842. Hive House Clough, Warley.—*Herb. S. K.*

1867. Dam Head, and Salterlee, Shibden.—*J. W.*

Common in marshy places and by stream sides, in all the valleys.

**Trollius europæus**, L.—63. Globe flower.

Native. Scottish type. P. June.

1775. In Mossleden pasture, and here and there along the sides of Ripponden brook, as it runs towards Sowerby Bridge.—*J. B.*

1832 and 1844. Turner Clough, Rishworth.—*Herb S. K.*  
Very rare, and always confined to the Ryburn valley, where it still remains in several places, though it has been reported as extinct.

***Aquilegia vulgaris*, L.—60. Columbine.**

Native English type. P. June-July.

1775. A meadow at Stand Green, in Warley; a field at Dean, in Sowerby; a pasture at Lower Willow Hall, in Skircoat.—*J. B.*

1842. Plentiful in fields opposite Copley mill.—*Herb. S. K.*

1862. Field opposite Copley mill; Norland; Shibden.—*Miall's Flora.*

1867. In the valley which joins the main Shibden dale at Dam Head; in a hollow place on the left of the stream near the paddock, Shibden; and near Coley Church.—*J. W.*

1877. In Catholes Clough, below Hartley Royd, probably a garden outcast.—*A. Stansfield in Lees' Flora.*

Very rare, and probably in part an escape from cultivation. Still found near the paddock, Shibden; also at Birdholme, Shibden (1891)—*G. L. Lister*; and in a field corner at Broad Bottom, Wadsworth (1892)—*J. Needham.*

**NYMPHÆACEÆ.**

[*Castalia speciosa*, Salisb.—88. (*Nymphaea alba*, L.) White Water Lily.

Alien, extinct. British type.

1830. In a pond at the water engine, Siddal.—*Herb. S. K.*

It is interesting to know that it once grew in this (now) most unlikely locality, though it can never have been more than an introduction.]

**PAPAVĒRACEÆ.**

[*Papaver somniferum*. L. Opium Poppy.

Alien.

1865. A solitary specimen in an old quarry at the bottom of Elland wood.—*J. W.*]

**Papaver Rhœas**, L.—104. Poppy.

Colonist. British type. A. June-August.

1841. Halifax.—*Herb. S.K.*

1844. Luddenden Brook.—*S.K.*

1867. Shibden, cornfields, common.—*J.W.*

Infrequent; found in cornfields about Hipperholme and Lightcliffe, but it is almost unknown west of Halifax. King mentions it as previously unknown to him at Luddenden.

[**Meconopsis cambrica**, Vig.—14. Welsh Poppy.

Alien, extinct. Atlantic type.

1830. Wheatley.—*Herb, S.K.*

Introduced from Wales, and extinct in 1862.—*Miall's Flora.*]

[**Chelidonium majus**, L.—96. Celandine.

Denizen, extinct. English type. P. May-July.

1775. In rough places, often about old buildings. Near Elland Hall, Marshall Hall, Lower Willow Hall, and in several rough places near Halifax.—*J.B.*

Lane House, Luddenden.—*Herb. S.K.*]

## FUMARIACEÆ.

**Neckeria claviculata**, N.E.Br.—87 (*Corydalis claviculata* DC.) Climbing Fumitory.

Native. British type. A. June-August.

1775. In Woodhouse Scar, in Skircoat; about Salterhebble in several places; in Daisy Bank Wood in Warley.—*J.B.*

1840. Near Halifax, frequent.—*Baines' Flora.*

1862. Elland Wood, and wood between Luddenden and Luddenden Foot. — *C. Eastwood*; Wheatley.—*Miall's Flora.*

1864. Mytholm Clough, Hebden Bridge.—*J.W.*

1888. Hebden Valley.—*F. H. Lees.*

Infrequent, but abundant in some woods and rocky places; Elland Park Wood, and Park Nook; Salterhebble; Woodhouse Scar; Luddenden Dean; and Hardcastle Crags.

**Fumaria officinalis**, L.—106. Fumitory.

Colonist. British type. A. June-August.

1775. Fields about Heath and Shaw, and Chapel in the Groves (Southowram).—*J.B.*

1867. Near Whitehall bar, Hipperholme.—*J.W.*

Infrequent, in waste or cultivated ground; Lightcliffe; Hipperholme (quarry); Sterne Mill; Mixenden.

#### CRUCIFERÆ.

***Nasturtium officinale***, Br.—112. Water-cress.

Native. British type. P. June-August.

1775. In wet ditches about Longbottom's mills in Warley; Warley Clough; wet places about Halifax, Elland, Brighouse, &c.—*J.B.*

1845. "Water Cresses" grow in North Dean, Copley Ground.—*Med. Bot. Soc.*

1867. Introduced into the Wheatley valley from Luddenden.—*J.W.*

Infrequent, in small streams, &c. Sun Wood, Lightcliffe; Norland Moor; West Vale; Ryburn Valley; Hardcastle Crag. It is still much sought after, and so is probably a diminishing species.

[***Nasturtium sylvestre***, Br.—63.

Native? English type. P. June-September.

1867. Wheatley valley.—*J.W.*

The only record, and if correct, there is no reason why it should not have been native here, but further information is desirable.]

***Nasturtium palustre***, DC.—84.

Alien. British type. A. July-August.

1888. At High Road Well, on road scrapings. This station (800 feet) is much higher than its usual vertical range, and its occurrence here rather remarkable.

***Nasturtium amphibium***, Br.—46.

Native. English type. P. July-August.

Since 1890 in Clay's mill-dam, Luddenden Foot.

***Barbarea vulgaris***, Br.—97. Yellow Rocket.

Native. British type. B. June-July.

1862. Fields and Calder banks near Copley.—*Miall's Flora.*

Infrequent, on stream sides or in damp fields: Lightcliffe, Siddal, Copley, Wheatley, Luddenden, &c.

**Barbarea stricta**, Andrz.—12.

Colonist. B. May-August.

1842 & 1844. Copley Holms.—*Herb. S.K.*

1862. Fields about Copley.—*C. Eastwood.*

**Barbarea præcox**, Br. American Cress.

Alien. May-September.

Near Hebden Bridge.—*S. Gibson in Herb. S.K.*

A casual on rubbish: Elland, Salterhebble, &c.

**Cardamine amara**, L.—75. Bitter-cress.

Native. British type. P. May-July.

1775. Several moist places about Warley Clough; in many moist meadows about Halifax.—*J.B.*

1842. Many places about Luddenden.—*Herb. S.K.*

1862. Salterhebble.—*J. Bates*; Copley; Grimescar Wood. *Hudd. Nat. Hist. in Miall's Flora.*

Infrequent, by stream sides: Clifton Beck; Walter Clough; Elland Park Wood; Copley; Highlee Clough in Norland; Soyland; Cragg Vale; Luddenden Dean; Hardcastle Crag.

**Cardamine pratensis**, L.—112. Cuckoo-flower, Lady's Smock, Milk-maid.

Native. British type. P. April-June.

1867. Opposite Shibden Mill Inn.—*J.W.*

Very common in moist pastures throughout the parish.

[**Cardamine hirsuta**, L.—110.

Native? British type. A. April-July.

1844. Luddenden brook.—*S.K.*

1867. Shibden.—*J.W.*

These records refer to the aggregate form, which includes the next species. *C. hirsuta* proper, probably occurs in drier stations, but it has not yet been clearly identified as distinct from *C. flexuosa* by the Botanical Section.]

**Cardamine flexuosa**, With.—101.

Native. British type. B. or P. April-August.

Very common, in wet woods, shady places and ditches in all the valleys. First record 1891.

**Erophila vulgaris**, DC.—104. Whitlow Grass.

Native. British type. A. April-June.



1839. Skircoat.—*Herb. S.K.*

The only record, and though the rocks and sandy ground about Woodhouse Scar in Skircoat would afford a suitable habitat, there is but little doubt that it is now extinct there. It might, however, still be found in similar situations.

*Cochlearia officinalis*, L.—82. Scurvy Grass.

Casual. British type. P. June-July.

1890-92. Calderside, Elland. Fairly plentiful at first, but diminishing afterwards till none was found in 1893. *M. M. Buckley.*

It is not known whether this was a sporadic case of *C. alpina* occurring in the Calder basin, or simply an introduction with grain.

*Cochlearia Armoracia*, L. Horse-radish.

Alien, or Denizen. P. June.

1775. A rare plant hereabouts; only in the Pighill meadows in Skircoat.—*J.B.*

Infrequent, in waste ground, field corners and river banks, as Old Wheatley corn mill, Calder side near Tag lock, Holmfield, &c.

*Hesperis matronalis*, L. Dame's Violet.

Alien. P. June-July.

1843. In Hollins Wood, Warley. The outcast of a garden.—*Herb. S.K.*

1862. Formerly plentiful in Hollins Wood, Luddenden.—*S. King in Miall's Flora.*

1891. Sterne Mill, a garden escape.

***Sisymbrium Thalianum***, J. Gay.—99. Thale-cress.

Native. British type. A. May-September.

1841. Well Head.—*Herb. S.K.*

1862. Skircoat Moor.—*Miall's Flora.*

Rare, on dry banks: on the railway bank at Wheatley (1895).

***Sisymbrium officinale***, Scop.—110. Hedge Mustard.

Native. British type. A. June-September.

1867. Roadsides at Salterhebble and North Dean.—*J.W.*

Infrequent, on roadsides and waste ground: Skircoat, Sterne Mill, Copley, Tag lock, Wheatley.

*Sisymbrium Sophia*, L.—64. Flixweed.

Casual. English type. A. June-July.

About Elland Malt-kilns, Sterne Mill, and Dapper Mill, Wheatley, since 1893.

*Sisymbrium Irio*, L.—1. London Rocket.

Casual. Local type. A or B. June-September.

About Dapper Mill, Wheatley (1893-94), and malkilns at Elland (1894).

***Sisymbrium Alliaria***, Scop.—99. Jack-by-the-Hedge, Sauce-alone, All-sauce.

Native. British type. B. May-July.

1775. By the side of the footpath on the top of Stepswaste, near Warley Clough; side of the road leading from Halifax towards Ovenden; several hedge-rows about Ripponden.—*J.B.*

In hedges, rare and more restricted than formerly: Lightcliffe and Shibden.

*Erysimum cheiranthoides*, L.—38.

Casual. English type. A. July-September.

1843. Between Brighouse and Sowerby Bridge.—*S. Gibson* in the *Phytologist*.

1844. Luddenden Brook Weir. "From sweepings of the Corn Mill."—*Herb. S.K.*

1895. Waste ground, Queen's Road, King Cross.

*Camelina sativa*, Crantz. Gold of Pleasure.

Alien. A. July-August.

1840. Mill House, Sowerby.—*J. S(hepherd)* in *Herb. S.K.*

1895. Sterne Mill; Elland Wood side.

***Brassica campestris***, L. Turnip, Rape.

Colonist. English type. A. June-September.

1844. *B. Napus*. Luddenden Brook.—*S.K.*

The form *B. Rapa* is found on the borders of fields as a stray from cultivation, and *B. Napus* also, but less frequently.

*Brassica Sinapioides*, Roth—63. (*B. Nigra*, Koch.) Black Mustard.

Casual. English type. A. June-August.

1840. In cornfields at Hebden Bridge.—*S. Gibson* in *Baines' Flora*.

1844. Luddenden Brook damstones.—*S.K.*  
No recent record, though it is likely to occur again.

**Brassica Sinapistrum**, *Boiss.*—112. (*Sinapis arvensis*, L.)  
Charlock, Wild Mustard.

Colonist. British type. A. June-August.

1844. Luddenden Brook.—*S.K.*

1867. Cornfields near Scout Wood, Shibden.—*J.W.*

Common in cultivated fields: Shibden, Walter Clough,  
Lightcliffe, Elland, &c.

**Bursa Bursa-pastoris**, *Weber*—112. (*Capsella Bursa-pastoris*, Moench.) Shepherd's Purse.

Native. British type. A. April-November.

1775. In the lane leading from Lower Willow Hall to  
Broadgates in Skircoat; in many lanes and barren places  
about Halifax, Elland, &c.—*J.B.*

1867. Shibden.—*J.W.*

Very common on the sides of roads and paths and waste  
ground, &c.

*Lepidium rudemale*, L.—38. Pepperwort.

Casual. English type. A. June-August.

In recent years (since 1887) of rather frequent occurrence  
on the Calder banks about Sterne Mill, and on waste at  
Dapper Mill, Wheatley.

*Lepidium sativum*, L.

Alien. June-July.

1893. Sterne Mill; probably a garden outcast.

**Lepidium campestre**, Br.—86. Pepperwort.

Native. British type. A or B. June-August.

1840. Kershaw House and Upper Foot Farms, Midgley.  
—*Herb. S.K.*

1840. Frequent in the fields above Upper Foot in Midgley  
and other places near Halifax.—*Baines' Flora.*

1844. Luddenden Brook damstones.—*Herb. S.K.*

1862. Fields near Luddenden Foot.—*C. Eastwood.*

Found recently in suspicious stations only, at Sterne Mill  
and Elland.

*Lepidium hirtum*, Sm.—88. (*L. Smithii*, Hook.)

Alien. British type. P. July-August.

1888-90. Canal-side, Elland Park Wood, probably introduced.

*Lepidium Draba*, L.

Alien. June-July.

Occasionally on waste ground at Elland gasworks and Wheatley.

**Thlaspi arvense**, L.—84. Penny Cress.

Colonist. British type. A. June-August.

— Between the canal and new road, Skircoat.—  
*Herb. S.K.*

1862. Fields between canal and road from Salterhebble to Copley.—*Miall's Flora*.

Casually, on waste ground, Sterne Mill; Dapper Mill, Wheatley; Elland.

**Raphanus Raphanistrum**, L.—110. Wild Radish.

Colonist. British type. A. June-August.

1844. In cornfields about Luddenden, frequent.—*Herb. S.K.*

Frequent in market gardens: Shaw Syke (1886).

#### RESEDACEÆ.

*Reseda lutea*, L.—53. Wild Mignonette.

Alien. English type. B. June-July.

Casually on waste ground: 1895, Elland, Luddenden Foot; under the Copley viaduct since 1894.

**Reseda Luteola**, L.—95. Woad, Weld, Yellow-weed.

Native. British type, B. June-August.

1775. Field above North Dean top in Greetland, towards Clay House; several fields about Northowram.—*J.B.*

1862. Skircoat Moor, among rubbish.—*S.K.* Near Fixby Park.—*C. Eastwood*.

Rare, on waste ground: quarries, Hove Edge, Lightcliffe (since 1888); Elland.

#### VIOLARIEÆ.

**Viola palustris**, L.—104. Marsh Violet.

Native. British type. P. April-June.

1775. In a ditch near Flybrass-laith just below the house; Norland Moor crossing over to Greetland where the Butterwort grows.—*J.B.*

1840. Norland Moor.—*Baines' Flora*.

1841. Long Wood, Skircoat.—*Herb. S.K.*

Common in bogs and marshy ground: Copley, Norland Moor, Cragg Vale, Rishworth, Hardcastle Craggs, Luddenden Dean, Ogden, &c.

[***Viola odorata***, L.—80. Sweet Violet.

Native? English type. P. April-May.

1775. In the lane by Causey-head in Warley; in a lane near Heath in Skircoat; about Shaw Hill near Halifax.—*J.B.*

1838. Bullace-tree field and Hive House Farm, both near Luddenden.—*Herb. S.K.*

1862. Daisy Bank Wood, Luddenden Foot.—*Miall's Flora*. Probably now extinct, and never truly wild.]

***Viola silvestris***, Reich.—51. (*V. Reichenbachiana*, Bor.) Wood Violet.

Native. P. March-June.

1840. Near Halifax, frequent.—*Baines' Flora*, under the name of *V. flavicornis*.

1842. Common about Luddenden.—*Herb. S.K.*, as *V. canina*.

1862. Wood near Luddenden.—*C. Eastwood*, as *flavicornis*.

1867. Near Limed House, Shibden.—*J.W.*, as *V. canina*.

There is much confusion in the nomenclature of the Wood Violets, but our local plant conforms to the type *silvestris*, which is frequently regarded as a variety of the species *V. Riviniana*, Reich. (*V. sylvatica*, Fr.).

Fairly common, and in a few localities abundant, in hedge-banks and open spaces in woods: Elland Park Wood, Lightcliffe, Norland Clough, Stainland, Soyland, Cragg Vale, Luddenden Foot and Dean, Hebden Valley.

***Viola tricolor***, L.—112. Field Pansy.

Colonist. British type. A. June-July.

1867. Cornfields near Scout Wood, Shibden.—*J.W.*

Common, in cultivated ground: Park Nook, Elland, Lightcliffe, Copley, Wheatley, Warley, Widdop, &c.

***Viola arvensis***, Murr.—100. Field Pansy.

Colonist. British type. A. June-July.

1856. Lane House garden.—*Herb. S.K.*



Less frequent than the preceding, but in similar situations: Shaw Syke, and Queen's Road, Halifax, Pellon, Skircoat, Sterne Mill, Elland.

**Viola lutea**, Huds.—64. Yellow Mountain Pansy.

Native. Scottish type. P. June-August.

1724. Halifax.—*Ray's Syn.* iii.

1775. In plenty in the fields about Illingworth; upon Beacon Hill, near Halifax, though sparingly; in rough pastures about Clough-head in Warley.—*J.B.*

1841. Fields about the bottom of Ogden Clough.—*Herb. S.K.*

1862. Beacon Hill.—*J. Bates.* Illingworth; Warley.—*Miall's Flora.*

1867. Swales Moor, Shibden; Mixenden towards Ogden.—*J.W.*

It is still plentiful about Ogden, Illingworth, and Mixenden Ings.

#### POLYGALEÆ.

**Polygala vulgaris**, L.—79. Milkwort.

Native. British type. P. May-August.

Much rarer than the next species. Mr. T. W. Woodhead, of Huddersfield, sends me a specimen of true *vulgaris* from pastures at Fixby (1893), which is at present the only authenticated example, but closer examination will distinguish it from the following in other localities.

**Polygala serpyllacea**, Weihe—91. (*P. depressa*, Wend.)  
Milkwort.

Native. British type. P. May-August.

1775. Skircoat Moor; Snakehill, near Halifax; Warley Moor.—*J.B.* 1842. New Laithe, Warley.—*Herb. S.K.*

1867. Shibden.—*J.W.*

Common in hilly pastures and rough ground on the edge of the moors. The older records are all under the name of the aggregate *P. vulgaris*.

#### CARYOPHYLLEÆ.

**Saponaria Vaccaria**, L.

Alien. June-August.

It has been noted nearly every year since 1887 on waste

ground at Sterne Mill, Copley, or Elland, and once on Mosleden Moor, Rishworth, growing close to *Narthecium*.

**Saponaria officinalis**, L. Soapwort.

Denizen. English type. P. July-September.

1775. In plenty about Hebden Bridge; near Ripponden; and at the end of the lane going down to Styes in Sowerby.—*J.B.*

1845. In Bentley Royd, Sowerby; near White Windows, Norland; and below Sterne Mill.—*Med. Bot. Soc.*

Infrequent, recent stations are Mytholmroyd, Firth House in Barkisland, and Elland.

**Silene Cucubalus**, Wibel.—104. Bladder Campion.

Native. British type. P. June-August.

1775. In most of the cornfields about Skircoat Moor; Steps in Warley.—*J.B.*

1844. Lane House damstones, Luddenden Brook.—*Herb. S.K.* 1867. Upper Shibden.—*J.W.*

Infrequent, on railway banks and waste ground: Lightcliffe, Halifax, Elland, Tag Lock, Salterhebble, Copley, Norland, Rishworth, Hebden Bridge, and Ogden.

[*Silene anglica*, L.—57.

Alien. English type. A. July-August.

1844. Lane House damstones, Luddenden Brook.—*Herb. S.K.* Possibly "from the sweepings of the corn mill," but more likely an escape from King's own garden at Lane House, for his herbarium contains a specimen, dated 1842, which was "Raised from the seed of a Yorkshire specimen."]

**Lychnis alba**, Mill.—102. White Campion.

Native, British type. B. June-July.

1843. In a field above the Hollins, Warley.—*Herb. S.K.*

1844. Luddenden Brook.—*S.K.*

1867. In a cornfield at the top of Burnt Brow, Shibden.—*J.W.*

Infrequent, though perhaps more common than formerly, and with a range extending to 750 feet: at Halifax in various places, Stainland, Elland, Tag Lock, Norland, Luddenden Dean, and Hebden Bridge.

**Lychnis dioica**, L.—111. Red Champion.

Native. British type. P. May-July.

1867. Woods on the banks of the Red Beck, Shibden.—*J.W.*

Common, in hedges and all the woods and cloughs.

**Lychnis Flos-cuculi**, L.—112. Ragged Robin, Meadow Pinks.

Native. British type. P. June-July.

1775. Plenty of it in a meadow at Willow Hall in Skircoat, in another near the Pond, and in a third at Spoutfield, both in Sowerby. Sometimes it yields a double flower.—*J.B.* 1867. Shibden.—*J.W.*

Common by stream sides and in wet fields throughout the Parish.

**Lychnis Githago**, Scop.—100. (*Githago segetum*, Desf.)  
Corn Cockle.

Colonist. British type. A. June-September.

1844. Luddenden Brook damstones,—*S.K.*

1867. Cornfields, Upper Shibden.—*J.W.*

Infrequent, in cornfields at Elland and Copley. But like other colonists, it is in this district more of a casual with corn refuse or on waste ground, as at Sterne Mill, Hullen Edge, Colden Valley, Luddenden Dean, and Skircoat Green.

**[Cerastium quaternellum**, Fenzl.—51. (*Sagina erecta*, Huds.)

Native, extinct. English type. A. May-June.

1775. Dry hilly pastures and lane sides in Skircoat; lane between King Cross and Trimmingham, the Old Way; on Oak's Green near Rastrick; on Sodhouse Green near Illingworth.—*J.B.*

Like other plants in Bolton's list, which are now unknown, this is one of those that are found mainly in the South of England, and rapidly thin out north of the Midlands ("English type"). This class seems to be the most susceptible to the influences which have altered the Flora of Halifax since the last century. Compare *Thalictrum flavum*. Similar causes have exterminated *C. quaternellum* about Sheffield also, since 1798.]

**Cerastium glomeratum**, Thuill.—112.

Native. British type. A. May-August.

1835. Fixby Park; Roebuck, Warley.—*Herb. S.K.*

[1867. Shibden.—*J.W.*]

The latter record refers, no doubt, to the next species, which is not in the *Circulator* list. There is no recent record, but it is unlikely that *C. glomeratum* is quite absent from this district, though certainly rare.

**Cerastium triviale**, Link.—112. Mouse-ear Chickweed.

Native British type. P, April-September.

1844. Luddenden.—*S.K.*; and in King's *Herb.* "common."

Very common in fields, waste ground, roadsides, &c.

**Stellaria aquatica**, Scop.—57.

Native? English type. P. July-September.

Only found, since 1887, on the Calder banks near Sterne Mill.

**Stellaria nemorum**, L.—47. Broad-leaved Stitchwort.

Native. Scottish type. P. May-July.

1775. In plenty about Copley Mill and Woodhouse Mill, in Skircoat.—*J.B.*

1840. Woods near Halifax, very abundant.—*Baines' Flora.*

1841. About Luddenden, frequent.—*Herb. S.K.*

1862. Shibden, Luddenden, Fixby.—*Miall's Flora.*

1867. Sim-carr Wood; Shibden; Mytholm Clough, Hebden Bridge.—*J.W.*

1888. Pennant Clough, Great House Clough, Eastwood, and near Stanally in Harely Wood, Todmorden; *A. Stansfield*: Rastrick and Fixby; *C. P. Hobkirk* in *Lees' Flora.*

Infrequent, but perhaps the most abundant of our rarer species. By streams and wet places: Tag Lock, Elland; Willow Wood, Sowerby; and Broadhead Wood, Erringden, are additional localities; whilst of the older ones it is found abundantly in Mytholm or Colden Clough.

**Stellaria media**, Cyr.—112. Chickweed.

Native. British type. A. Nearly all the year.

1775. In the gateways leading into the fields in Gibbet Lane from Halifax to High Road Well.—*J.B.*

1844. Luddenden.—*S.K.* 1867. Shibden.—*J.W.*

Very common: roadsides, waste places, and woods, &c.

**Stellaria Holostea**, L.—109. Greater Stitchwort.

Native. British type. P. April-June.

1852. Beaumont Wood, Erringden; and Elland Park Wood,  
—*Halifax Museum Herb.*

1862. Grimescar Wood, Hollins Wood near Luddenden.—  
*Miall's Flora.* 1867. Shibden.—*J. W.*

Very common in woods and hedges.

**Stellaria graminea**, L.—109. Lesser Stitchwort.

Native. British type. P. June-August.

1867. Upper Shibden.—*J. W.*

Common, hedgebanks and streamsides: Walter Clough,  
Hove Edge, Tag Lock, Stainland, Copley, Wheatley,  
Ogden, Crimsworth Dean, Hardcastle Craggs, &c.

**Stellaria uliginosa**, Murr.—110. Bog Stitchwort.

Native. British type. A. May-July.

1844. Luddenden Brook.—*S. K.*

Common in wet and boggy ground: Sun Wood, Walter  
Clough, Ogden, Blackburn Valley, Cragg Vale, Crims-  
worth Dean, Heptonstall, Stansfield, &c.

**Arenaria trinervia**, L.—100. Sandwort.

Native. British type. A. End of April-July.

1837. Hedges opposite Sterne's Mill.—*Herb. F. A. Leyland.*

1852. Lane near Roolshead, Warley.—*Halifax Museum.*

Common in moist woods and hedgebanks: Lightcliffe,  
Elland Park Wood, Tag Lock, Barkisland, Soyland.

**Arenaria serpyllifolia**, L.—110.

Native. British type. A. June-August.

Rare, no record before 1895; wall-top, canal-side, Salter-  
hebble.

**Sagina procumbens**, L.—112. Pearlwort.

Native. British type. P. May-September.

1844. Luddenden.—*S. K.* 1867. Shibden.—*J. W.*

Very common on damp walls and paths, even in the town.

Var. **spinosa**, S. Gibs.

1840. Halifax, Shibden, Hebden Bridge, etc.—*S. Gibson*  
in *Baines' Flora.*

Gibson's variety, with "the edges of the leaves margined  
with minute diaphanous spines" is perhaps the usual  
here.

**Spergula arvensis**, L.—112. Corn Spurrey.

Colonist. British type. A. June-September.

1844. Luddenden.—*S. K.* 1867. Upper Shibden.—*J. W.*  
Common in corn fields and waste ground: Skircoat, Fixby,  
Norland, Wheatley, Illingworth, Luddenden, &c.

**Buda rubra**, Dum.—97. (*Spergularia rubra*, Pers.).

Red Sandwort.

Native. British type. A. or B. June-September.

1835. Hollins Mill Lane, Sowerby Bridge.—*Herb. S. K.*  
1867. Near Scout Hall, Shibden; roadside between Salter-  
hebble and Copley.—*J. W.*

Infrequent, on sandy soil: Savile Park and Woodhouse  
Scar, Skircoat; Copley; Illingworth.

## PORTULACEÆ.

*Claytonia perfoliata*, Donn.

Alien. A. May-July.

An occasional garden escape about Skircoat.

**Montia fontana**, L.—108. Water Blinks.

Native. British type. A. May-July.

1840. Turner Clough, Rishworth.—*Herb. S. K.*

1862. Fixby.—*Miall's Flora.*

1888. Norland Moor.—*F. A. Lees.*

Common in streams on or near the moors: Ogden, Warley,  
Norland, Barkisland, Soyland, Cragg Vale, Crimsworth,  
Stansfield, &c. The variety *rivularis* is also found.

## HYPERICINEÆ.

**Hypericum Androsæmum**, L.—80. Tutsan.

Native. Atlantic type. P. June-September.

1775. In several places bordering upon the river Calder,  
near Sowerby Bridge; in some hedges near Woodhouse  
in Skircoat; in Putin Park and Elland Hall Wood, both  
near Elland; in Toad-holes in Sowerby.—*J. B.*

1815. On the rocks opposite Copley Mill.—*Herb. F. A.*  
*Leyland.* 1840. Midgley Scout.—*Herb. S. K.*

1840. North Dean in Greetland; High Royd Wood in  
Warley; in a wood near the Triangle Inn, Sowerby;  
Midgehole Wood, nine miles west of Halifax.—*Baines'*  
*Flora.*

Rare, on the canal side near Elland; Pecket Wood, Crims-  
worth.



**Hypericum perforatum**, L.—101. St. John's Wort.

Native. British type. P. July-August.

1841. Lane House, Luddenden.—*Herb. S. K.*

1867. Scout Wood, Shibden; old quarries at the bottom of Elland Wood.—*J. W.*

Infrequent: Elland, North Dean, Copley and Hipperholme.

**Hypericum quadratum**, Stokes.—102. (*H. tetrapterum*, Fries). St. John's Wort.

Native. British type. P. July-September.

1867. Edge of Elland Wood on the brink of the canal.—*J. W.*, as *H. quadrangulum*.

Infrequent: Coley Mill, Lightcliffe; Elland Park Wood; Rishworth; Peckett Wood, Crimsworth.

**Hypericum humifusum**, L.—98. St. John's Wort.

Native. British type. P. July-August.

1838. Luddenden Dean; 1844. Skircoat Green.—*Herb. S. K.*

Infrequent, in sandy fields and banks: Shibden, Ovenden, Wheatley, Midgley, Triangle, Soyland, Rishworth, Stainland, Hardcastle Crags, and Heptonstall.

**Hypericum pulchrum**, L.—111. St. John's Wort.

Native. British type. P. June-August.

1844. Skircoat.—*Herb. S. K.*

Common on banks and moorland pastures, from Northowram to Walshaw.

[*Hypericum montanum*, L.—45.

Unknown. English type. P. July-August.

1775. In a field near Windle-Royde, in Warley; Delf field, Lower Willow Hall; Elland Edge, near the Slate Delves.—*J. B.*

Though Bolton's record may be correct, it is more probably an error. In Yorkshire *H. montanum* is usually found on limestone soil. Dr. F. A. Lees thinks that Bolton may have meant *H. dubium*.]

## MALVACEÆ.

**Malva moschata**, L.—88. Musk Mallow.

Native. British type. P. July-August.

1775. In several fields near Woodhouse Mill in Skircoat; in a lane going from Lower Willow Hall, to Bolton's Brow.—*J. B.*

Fields on the Burnley Road, at Elland, &c., not uncommon.—*Herb. F. A. Leyland.*

1840. About Gate Head and High Royd, in Warley.—*Baines' Flora.*

1844. Banks of the railway, Norland; 1854. Near Upper Foot, Midgley.—*Herb. S. K.*

1845. Washer Lane, and plentiful on the railroad banks.—*Med. Bot. Soc.*

1862. Railway embankment, Copley.—*Miall's Flora.*

1896. Near Elland Park Wood; unknown elsewhere.

**Malva sylvestris**, L.—96. Mallow.

Native. British type. P. or B. June-August.

1775. About Sowerby Bridge, on the Warley side, also about the town of Ovenden.—*J. B.*

1836. Roadsides in Skircoat, &c.—*Herb. F. A. Leyland.*

1854. Snail House bank, Luddenden.—*Herb. S.K.*

Infrequent: waste ground by the canal at Elland; field border at Lydgate in Stansfield (1895).

**Malva rotundifolia**, L.—83. Mallow.

Denizen. British type. P. July-August.

1854. A weed in Lane House Garden, Luddenden.—*Herb. S.K.*

Infrequent, in waste ground: Wheatley, Elland, Salterhebble.

*Malva pusilla*, Sm. (*M. Borealis*, Wallm.)

Alien. June.

1893. Dapper Mill, Wheatley, introduced with wool.

*Malva parviflora*, L.

Alien.

1894. Fixby, on manure.

#### TILIACEÆ.

*Tilia vulgaris*, Hayne. Lime-tree.

Alien. Tree. July-August.

1837. Halifax.—*Herb. S.K.*

Near Shibden Hall.—*Herb. F. A. Leyland.*

1867. In a field corner near Pye Nest.—*J.W.*

Infrequent and only where planted, as the "Twelve Apostles" bordering the garden wall of Heath Hall, of which only two remain,

*Tilia cordata*, Mill.—18. (*T. parvifolia*, Ehrh.)

Alien. English type. Tree. End of July-August.

In Gill Holme opposite Hardcastle Crag, probably planted.

#### LINEÆ.

**Linum catharticum**, L.—112. Purging Flax.

Native. British type. A. July-September.

1775. Dry pastures in many parts; Upper and Lower Willow Hall; bordering on Warley Clough.—*J.B.*

1845. Norland Moor, Southowram, Swales Moor.—*Med. Bot. Soc.* 1867. Opposite the Paddock, Shibden.—*J.W.*

Common in elevated pastures.

*Linum usitatissimum*, L. Flax.

Alien. A. June-August.

1844. Luddenden Brook.—*Herb. S.K.*

1867. Road leading to quarries at Scout Wood, Shibden.—*J.W.*

A common but impermanent casual: Shaw Syke, Sterne Mill, Dapper Mill, Elland, Ripponden, Hebden Bridge, &c.

#### GERANIACEÆ.

[*Geranium nodosum*, L. (*G. macrorhizum*).

Extinct Alien.

1835. Washer Lane, near Halifax.—*S. Gibson.*

For a discussion of this record, see the *Naturalist*, 1889, p. 80. The specimen is in H. C. Watson's Herbarium at Kew.]

*Geranium phæum*, L.

Alien. Germanic type. P. June-July.

1887—Naturalised on Suffolm or South-holme Farm, Walter Clough.

**Geranium sylvaticum**, L.—56. Wood Geranium.

Native. Scottish type. P. June.

Very rare by stream sides, and previously unrecorded.

1892. Stoneshaw Gate, Heptonstall. 1894. Crimsworth Dean, very sparingly.

[*Geranium pyrenaicum*, Burm.—58.

Extinct Alien. English type. P. July.

1775. In most of the fields and lanes about Lower Willow Hall, in Skircoat, from seeds brought from Bingley and scattered here and there.—*J.B.*

1835. Broad Gates, Skircoat, "sown there by Bolton"  
—*Herb. S. K.*

1840. Bottom of Pye Nest Lane, near Halifax, where it  
was for many years very abundant, and where it was  
originally introduced by the late Mr. Bolton; now nearly  
eradicated.—*Baines' Flora.*]

**Geranium molle**, L.—112. Dove's-foot.

Native. British type. A. June-August.

Infrequent in waste ground and cultivated land: Ovenden,  
Woodhouse Scar, Skircoat, Elland, Copley, Luddenden,  
&c. No record before 1887.

**Geranium pusillum**, L.—79.

Colonist. English type. A. July-August.

Infrequent in waste ground and cultivated fields; some-  
times not more than a casual: Wheatley, Lightcliffe,  
Skircoat and Copley. No record before 1885.

**Geranium dissectum**, L.—110.

Native. British type. B. June-August.

1867. Cloverfield, Upper Shibden; plentiful near Salter-  
hebble.—*J.W.*

Infrequent on waste ground: Salterhebble, North Dean,  
Norland, Woodhouse Scar, Skircoat, Luddenden, &c.

**Geranium columbinum**, L.—76.

Casual. English type. A. June-July.

1840. Near Midgley.—*S. Gibson. Herb. S.K.*

**Geranium Robertianum**, L.—111. Herb Robert.

Native. British type. A or B. May-October.

1775. In many rough places about Warley Clough; many  
rough places about Halifax and Elland.—*J.B.*

1844. Luddenden brook.—*S.K.* 1867. Shibden.—*J.W.*

Very common in damp shady situations in woods and  
cloughs throughout the Parish.

**Erodium cicutarium**, L'Hérit.—104. Stork's-bill.

Colonist. British type. A or B. June-September.

1775. In Gibbet Lane and about Goldsmith's Grave, near  
Halifax; turnpike road at Bridge-end in Rastrick.—*J.B.*

— Skircoat.—*Herb. F. A. Leyland.*

1854. Lane House garden, Luddenden.—*Herb. S.K.*

Rather common in waste ground, especially near mills:  
Elland, Copley, Sterne Mill, Wheatley (railway-bank),  
Luddenden, &c.

**Oxalis Acetosella**, L.—109. Wood Sorrel.

Native. British type. P. April-June.

1724. "The purple flowered form was noticed by Dr. Richardson 'in a hollow lane betwixt Northowram and Halifax.' *Ray, Syn.*"—*Lees' Flora*.

1775. Willow Hall Wood and Woodhouse Scar in Skircoat, and many other places thereabouts. In a lane near Northowram is a species of this bearing a red flower, which is in great esteem.—*J.B.*

— Hive House Clough, Warley.—*Herb. S.K.*

1867. Howcans Wood, Shibden, abundant.—*J.W.*

Common in woods, and less frequently on banks. The purple form is found occasionally, as at Hebden Bridge.

[*Impatiens Noli-tangere*, L.—24. Balsam.

Alien. A. July-August.

1815. Hebden Bridge, now eradicated, and was most probably the outcast of a garden.—*Herb. F. A. Leyland.*]

[*Impatiens biflora*, Walt.—7. (*I. fulva*, Nutt.)

Alien. A garden escape. A. June-August.

1865. Near Elland.—*W. Guthrie.*]

*Impatiens parviflora*, DC.

Alien. A naturalised garden escape. A. June-September.

1864. Mytholm Clough, Hebden Bridge.—*J.W.* as *I. fulva*.

1877. Near Lumb-bank Mill, Mytholmroyd (quite naturalised).—*A. Stansfield*.

Still abundant in several places in the Colden valley, *i.e.* Mytholm Clough; also well established at the foot of Clover Hill, and Copley.

## ILICINEÆ.

**Ilex Aquifolium**, L.—105. Holly.

Native. British type. Bush or tree. May-June.

1839. Common about Luddenden.—*Herb. S. K.*

1867. Shibden.—*J. W.*

Common in woods and hedges; flowers sparingly, even in Elland Park Wood.

## SAPINDACEÆ.

*Acer Pseudo-platanus*, L. Sycamore. Plane.

Alien. Tree. April-June.

1839. In many places about Luddenden.—*Herb. S. K.*

1867. Shibden.—*J. W.*

Very common in woods. Frequently planted, but self-sown seedlings in every stage of growth are to be met with in old quarries and on waste stony ground.

**Acer campestre**, L.—62. Maple.

Native. English type. Tree. May-June.

1840. Sowerby Dean.—*Herb. S. K.*

1867. Lee Lane and Upper Shibden.—*J. W.*

Infrequent, in hedges, and but rarely flowering. Mainly confined to the east of Halifax: Lightcliffe, Shibden, Walter Clough, Cromwell and Elland Park Woods, Norland, and Midgley.

LEGUMINOSÆ.

**Genista anglica**, L.—86. Needle Furze. Cat Whin.

Native. British type. Shrub. May-June.

1775. Warley, Sowerby, Rishworth, Soyland and Skircoat Moors.—*J. B.*

1842. Wadsworth Moor.—*Herb. S. K.*

— Norland Moor, etc.—*Herb. F. A. Leyland.*

Infrequent, and now only found sparingly on Greetland, Norland, Sowerby, Erringden and Wadsworth Moors.

[**Genista tinctoria**, L.—76. Green-weed. “Wood-waxen.”

Native. English type. P. June-August.

1775. Several fields about Rastrick, also in a field near Elland Hall.—*J. B.*

1819. In a field near Greetland.—*Herb. F. A. Leyland.*

1862. Fixby Edge.—*Miall's Flora.*

No recent record.]

**Ulex europæus**, L.—112. Furze. Gorse. Whin.

Native. British type. Shrub. Feb.-May and Aug.-Oct.

1775. Skircoat, Norland, and Warley Moors; flowers twice a year. In mild winters such as this, 1774-5, it has flowered quite through, in Woodhouse Scar and upon Skircoat Moor.—*J. B.*

1841. Between Mile Cross and Halifax.—*Herb. S. K.*

1867. Upper Shibden.—*J. W.*

Common on the less elevated moors, also found in open woods and on roadside banks. Still on Skircoat Moor.



**Ulex Gallii**, Planch.—55. Autumnal Gorse.

Native. English type. Shrub. August-October.

1862. Norland Moor.—*Miall's Flora*, as *U. nanus*.

1867. Above Ogden Reservoir.—*J. W.* as *U. nanus*.

1888. Todmorden district.—*A. Stansfield*; Greetland—*F. A. Lees*.

Common on moors, Norland, Warley, Ogden, Midgley, &c.

**Cytisus scoparius**, Link.—109. Broom.

Native. British type. Shrub. May-June.

1775. In plenty everywhere about Halifax, Elland, &c.—*J. B.* — Skircoat Moor.—*Herb. Leyland*.

1867. Upper Shibden and Salterlee.—*J. W.*

Common: Ogden, Shibden, Elland Park Wood, Luddenden, Hebden Bridge, &c.

**Ononis repens**, L.—100. Rest-harrow.

Native. British type. Shrub. June-August.

1775. In a tenter field at Pye Nest in Skircoat; in the Woodfield at Batch in Warley.—*J. B.*

1841. Between Brearley and Mytholmroyd.—*Herb. S.K.*

Rare: the only station now known is in Greetland, near Gate Head.

*Medicago sativa*, L. Lucerne.

Alien. P. June-August.

1856. Lane House garden, Luddenden.—*Herb. S.K.*

Frequently occurs as a casual at Sterne Mill, Elland, &c.

*Medicago falcata*, L.—5.

Alien. Germanic type. P. July.

1895. A casual at Elland, and Dapper Mill, Wheatley.

**Medicago lupulina**, L.—105. Medick.

Native. British type. A or B. June-August.

1842. Banks of the railroad, Luddenden Foot.—*Herb. S. K.*

Infrequent in fields, &c.: Lightcliffe, Skircoat and Copley.

**Medicago denticulata**, Willd.—20.

Colonist. English type. A. June-September.

1828. Roadside, near Brearley Mill (with *M. maculata*).—*Herb. S. Gibson*.

Rather common in cultivated and waste ground: Shaw Syke, Skircoat, Copley, Wheatley, Elland, Salterhebble, Stainland, Luddenden, &c.

**Medicago arabica**, Huds.—43. (*M. maculata*, Sibth.)

Colonist. English type. A. June-September.

1828. In a field near Brearley Mill.—*Herb. Leyland*.

1835. Roadside at New Prison near Halifax.—*Herb. S.K.*

In similar situations to the preceding, and usually with it, though not so common. Neither is much more than a casual.

**Melilotus officinalis**, Lam.—72. (*M. altissima*, Thuill.)

Melilot.

Colonist. English type. A or P. June-August.

1775. In pastures about Elland Hall, and in like places about Marshall Hall, near Elland.—*J. B.*

1862. Shroggs Wood bottom; North Dean.—*J. Bates*.

Chiefly on waste ground: along the canal from Elland to Salterhebble; Sterne Mill; Wheatley.

**Melilotus alba**, Desr.—40. White Melilot.

Colonist. English type. A or B. July-August.

1826. Wood End in Wadsworth.—*Herb. Gibson*.

Found with the preceding on waste ground, though not as abundant; occasionally in cultivated ground, as at Ripponden.

*Melilotus arvensis*, Wallr. (*M. officinalis*, Desr.)

Alien. A. July-August.

Infrequent, on waste ground since 1888: Elland Wood bottom, Sterne Mill.

*Melilotus indica*, All. (*M. parviflora*, Lam.)

Alien. A. July.

Infrequent: Sterne Mill, 1887-8.

[*Trifolium subterraneum*, L.—39.

Unknown. English type.

1775. In Steps-waste in Warley, in two or three pastures about Heath in Skircoat, also about Halifax in many of the dry banks.—*J. Bolton*.

Not known north of Notts.; and though it seems possible that it might once have grown here, the evidence is against it.]

**Trifolium pratense**, L.—112. Purple Clover.

Native. British type. P. May-September.

1867. Shibden.—*J. Walker*.

Very common in pastures, banks, &c.

**Trifolium medium**, L.—106. Meadow Clover.

Native. British type. P. June-August.

1775. In a field by Illingworth Chapel, several fields about Rastrick, several fields about Northowram.—*J. B.*

1888. Todmorden.—*Lees' Flora.*

Infrequent on banks, &c.: Elland, Luddenden Dean, Rishworth, Cragg Vale, Hebden Bridge.

**Trifolium incarnatum**, L. Crimson Clover.

Alien. A. June-July.

Rare, in cultivated fields: Lightcliffe (1885), Butts Green, Warley, (1896).

**Trifolium arvense** L.—94. Hare's-foot Trefoil.

Native? British type. A. July-August.

1854. Came up in the garden (Lane House).—*Herb. S. K.*

1862. Brighouse.—*Miall's Flora.*

**Trifolium hybridum**, L. Alsike Clover.

Alien. P. June-August.

Infrequent and increasing; a recent introduction; no record before 1886: Ovenden; Wheatley; railway bank, Elland; Tag Lock; Luddenden.

**Trifolium repens**, L.—112. White Clover.

Native. British type. P. June-October.

1867. Shibden.—*J. Walker.*

Very common in meadows, pastures, roadsides, &c.

**Trifolium procumbens**, L.—105. Hop Trefoil.

Native. British type. A. June-August.

1867. Near Limed House, Shibden.—*J. W.* (Probably the next species is meant).

Rare, though perhaps confused with the next: Wyke, 1890.

**Trifolium dubium**, Sibth.—109. (T. minus, Sm.) Lesser Yellow Trefoil.

Native. British type. A. June-August.

Common in pastures, &c.: Lightcliffe, Shibden, Elland, Norland, Hebden Bridge, &c.

**Anthyllis Vulneraria**, L.—105. Kidney Vetch.

Native. British type. P. June-August.

1819. In a field at Marsh Delves in Southowram.—*Herb. Leyland.* The only record for the Calder valley.

**Lotus corniculatus**, L.—112. Bird's-foot Trefoil.

Native. British type. P. May-September.

— Skircoat Moor.—*Herb. Leyland*.

Common in dry fields and Banks.

**Lotus uliginosus**, Schk.—100. (L. major, Sm.)

Native. British type. P. July-August.

1831. Common about Luddenden.—*Herb. S. King*.

— Near Halifax, frequent.—*Herb. Leyland*.

1888. Todmorden.—*Lees' Flora*.

Infrequent, in moist meadows: Ovenden, Norland, Luddenden Dean, Cragg Vale, Hebden Bridge.

[**Astragalus glycyphyllos**, L.—64. "Wild Liquorice."

Native? Extinct. Germanic type. P. June-July.

1775. In a field just above Mixenden Green; in a field by Clough-head in Warley.—*J. Bolton*.

"Can this have been wild there; or is the flora of the country undergoing a gradual change, of which this and other observances of Bolton are a proof?"—*F. A. Lees*. See the next, and compare *Spiræa Filipendula*.]

**Ornithopus perpusillus**, L.—83. Bird's Foot.

Native. British-English type. A. May-July.

1775. In the back lane going from King Cross to Halifax; in all the roads on Willow-edge, in Skircoat.—*J. B.*

1840. Near Halifax, very common.—*Baines' Flora*.

— About Halifax.—*R. Leyland*; *Herb. S. K.*

No recent record, and never "very common." Here Bolton is supported by later botanists, though it now seems as impossible to find this species here as the preceding.

**Vicia hirsuta**, Gray—109. Common Tare.

Native. British type. A. May-August.

1775. In hedges about Salterhebble and Bank-house in Skircoat; about Shaw Hill near Halifax.—*J. B.*

1844. Luddenden Brook.—*Herb. S. K.*

— Hanging Royd Mill.—*Herb. S. Gibson*.

**Vicia gemella**, Crantz—74. (*V. tetrasperma*, Moench.)

Casual. English type. A. June-July.

1844. Luddenden Brook.—*Herb. S. K.*

— Hanging Royd Mill.—*Herb. Gibson*.

Infrequent, and only on waste ground near mills, where it seems only a casual: Sterne Mill and Wheatley.

**Vicia Cracca**, L.—112. Hedge Vetch.

Native. British type. P. End of June-August.

1775. In hedges about Bairstow in Skircoat, and in the hedges about Birks Hall in Ovenden Wood.—*J. B.*

1867. Top of Burnt Brow, Upper Shibden.—*J. W.*

Frequent in field borders.

**Vicia sylvatica**, L.—78. Wood Vetch.

Native. Scottish type. P. June-August.

1820. Stanley Clough, near Todmorden.—*Herb. Leyland.*

1856. Todmorden.—*J. Nowell, Herb. S. K.*

1877. Stanelly or (Stoney-lea) Clough in Hareley Wood, Stansfield.—*A. Stansfield.*

Still remains in this, one of its half-dozen stations in West Yorkshire.

**Vicia sepium**, L.—110. Bush Vetch.

Native. British type. P. May-July.

1844. Luddenden Brook.—*S.K.* 1867. Skircoat.—*J.W.*

Common by woods and hedge sides.

*Vicia lutea*, L.—18.

Casual. English type. A. June-August.

1896. Waste ground by malt-kilns, Elland.

*Vicia sativa*, L. Common Vetch.

Alien. British type. A. May-July.

— Near Heptonstall.—*Herb. Gibson.*

1867. Below the Brewery, Shibden Head.—*J. W.*

A stray from cultivation: Shibden, Elland, Fixby, Skircoat, &c.

**Vicia angustifolia**, L.—92. Wild Vetch.

Native. British type. A. June-July.

1830. Shibden Dale, &c.—*Herb. S. King.*

1833. Near Heptonstall; 1837, roadside between Elland and Brighouse.—*Herb. Leyland.*

1862. Ovenden.—*Miall's Flora.* Recent records are mainly Var. **V. Bobartii**, Koch (*V. angustifolia*, Sm.)

1837. In a field near Stump Cross in Northowram; fields on Conway's farm, Skircoat.—*Herb. Leyland.*

— Near Hebden Bridge.—*Herb. Gibson.*

Infrequent: Skircoat, Copley, Shibden, Fixby, Mytholmroyd, and Hebden Bridge.

*Lathyrus Aphaca*, L.—27.

Casual. English type. A. June-July.

Once or twice as a stray from corn mills: Wheatley (1895).

**Lathyrus pratensis**, L.—112. Meadow Vetch.

Native. British type. P. June-August.

1867. Shibden.—*J. Walker*.

Common in hedges, meadows, moist banks, woods, &c.

**Lathyrus montanus** Bernh.—107 (*L. macrorrhizus*, Wimm).

Tuberous Vetch.

Native. British type. P. April-July.

Near Halifax, frequent.—*Herb. Leyland*.

Common about Luddenden.—*Herb. S.K.* 1867. Shibden.

Very common in woods, hedges and banks.

Var. **tenuifolius**, Reich.

1815. Hareley Wood, near Todmorden.—*Herb. Leyland*.

1840. In a wood at Scout, near Todmorden.—*Baines' Flo.*

#### ROSACEÆ.

**Prunus spinosa**, L.—108. (*P. communis*, Huds.) Sloe, Blackthorn.

Native. British type. Shrub. April.

1775. Hedges below Woodhouse, and those near Copley Hall in Skircoat.—*J. Bolton*. Carr Green.—*Herb. Gibs*.

1840. Lane House Farm, Luddenden.—*Herb. S.K.*

Infrequent and sparingly in hedges and woods: Hipperholme, Elland Park Wood, Stainland, Blackburn Valley, Soyland, Rippenden, Luddenden Dean, Cragg Vale, Crimsworth Dean. It seldom flowers, and then only sparsely.

**Prunus Avium**, L.—97. Cherry.

Denizen. English type. Tree. April-May.

Infrequent, in woods, and usually an introduction: Cromwell Wood, Elland Park Wood, Clifton Beck, West Vale (1885), Blackburn Valley, Warley Clough.

**Prunus Cerasus**, L.—33. Dwarf Cherry.

Denizen. English type. Small tree. April-June.

1841. King Wood, Luddenden.—*Herb. S.K.*

1862. Grimescar Wood.—*Miall's Flora*.

Infrequent, in hedges, woods, &c.: Luddenden Dean, Brearley, Crimsworth Dean, Elland Park Wood (?). The records for this are rather doubtful through confusion with *P. Avium*.



**Prunus Padus**, L.—68. Bird Cherry. “Hagberry.”

Native. Scottish type. Tree. April-June.

1775. Allen's Wood in Norland; North Dean bottom in Greetland; hedges about Copley-holms in Skircoat.

Called here Hagberry.—*J.B.*

1837. Bottom of North Dean.—*Herb. Leyland.*

1840. Very abundant near Halifax.—*Baines' Flora.*

1842. Frequent about Luddenden.—*Herb. S.K.*

1867. Elland Wood.—*J.W.*

1879. Hebden Valley.—*F. A. Lees.* 1888. About Todmorden, many places.—*A. Stansfield; Lees' Flo.*

Frequent in wooded cloughs: other stations are Elland Park Wood, Norland Clough, Blackburn Valley, Sowerby, Rishworth.

**Spiræa Ulmaria**, L.—112. Meadow-sweet.

Native. British type. P. Late June-August.

1775. All along the borders of Warley Clough.—*J.B.*

1844. Luddenden Brook.—*Herb. S.K.*

1845. Near Scout Hall, Shibden; near Shibden Hall; Shaw Syke.—*Med. Bot. Soc.*

1867. Banks of Red Beck, Shibden.—*J. Walker.*

Common on stream sides, wet places in woods and cloughs, and in moist meadows: still at Shaw Syke in 1886.

**[Spiræa Filipendula**, L.—63. Dropwort.

Native? Extinct. English type. P. June-July.

1775. Only in a bank belonging to Hill in Warley, on the right hand side of the new turn-pike road going from Halifax to Burnley, very near the second milestone from Halifax.—*J.B.*

1840. In a lane near the second milestone on the road from Halifax to Luddenden Foot.—*Baines' Flora.*

A rare and diminishing species in West Yorkshire. It seems likely that Baines' received his information from Leyland or Gibson, but there is no local specimen in their Herbaria].

**Rubus idæus**, L.—110. Raspberry.

Native. British type. P. June.

1775. Steps Wood in Warley, Allen's Wood in Norland, and along the hedges in Woodhouse fields in Skircoat.—*J.B.* — Common.—*Herb. King, Gibson and Leyland.*

1845. “Hindberry” grows in Ovenden Wood, Elland Wood, and Beacon Hill side.—*Med. Bot. Soc.*

1867. Woods on banks of Red Beck, Shibden.—*J.W.*

Frequent in woods : Brookhouse, Sun Wood, Elland Park Wood, North Dean Wood, Cragg Vale, Crimsworth Dean, Hardcastle Craggs, Heptonstall Eaves, &c.,

**Rubus fruticosus**, L.—(112). Bramble, Blackberry.

Native. Shrub. June-October.

1775. Woods, lanes, and hedges, very common.—*J.B.*

1833. Near Halifax, frequent.—*Herb. Leyland.*

1867. Shibden.—*J.W.*

The enormous multiplication of recognised varieties makes it impossible to give a satisfactory list of the local brambles, as they have not been critically examined in recent years. The names given to their herbarium specimens by Gibson and Leyland are retained unchanged. The only recent additions to the list were obtained in Norland, from Sterne Mill upwards, by Mr. J. T. Aspin in 1894 and were named by the Rev. E. F. Linton.

**Rubus suberectus**, Anders.—31.

1833. Carr Green.—*Herb. Gibs.*

1888. Hebden Valley bottom.—*Y.N.U. Exc.*

**Rubus plicatus**, W.N.—45.

1843. Crow Nest Wood.—*Herb. Gibs.*

— Hebden Bridge (a variety).—*S. Gibson.* See *Lees' Flora.*

**Rubus carpinifolius**, W.N.—28.

1838. Near Sterne Mill.—*Herb. Leyland.*

1842. Near Luddenden.—*Herb. Gibs.*

— Hebden Bridge.—*S. Gibson ; Bab., Brit. Rubi.*

1862. Shibden.—*Miall's Flo. (? R. Maasii, Focke ; F. A. Lees.)*

**Rubus Lindleianus**, Lees.—64.

1840. Near Halifax.—*Baines' Flora.*

1888. Halifax.—*F. A. Lees.* 1894.—Norland.

**Rubus rhamnifolius**, W.N.—60.

1833.—Hopwood Lane, &c., near Halifax.—*Herb. Leyland.*

1842. Midge Hole Lane, Hebden Bridge.—*Herb. Gibs.*

1893. Norland ; named at Kew.

**Rubus affinis**, Auct. Angl.

1842. Midge Hole, Hebden Bridge.—*Herb. Gibson.*

1888. Hebden Bridge.—*F. A. Lees.*

**Rubus villicaulis** (sp. collect.)—53.

1842. Scar Bottom and Midge Hole.—*Herb. Gibson.*

**Rubus macrophyllus**, (sp. collect.)—62.

1833. Foster Clough, Hebden Bridge.—*Herb. Gibson.*

**Rubus Sprengelii**, Weihe—16.

— Hebden Bridge.—*S. Gibson; Bab., Brit. Rubi.*

1894. Norland?

**Rubus leucostachys**, Schl.—65.

1833. Hebden Bridge; 1842. Car Green.—*Herb. Gibson.*

1839. Very common near Halifax.—*Herb. Leyland.*

1862. Shibden.—*Miall's Flora.* 1894. Norland.

**Rubus infestus**, Weihe—10.

1869. Hebden Bridge.—*Bab., Brit. Rubi.*

**Rubus radula**, (sp. collect.)—63.

1842. Midge Hole, Hebden Bridge.—*Herb. Gibson.*

**Rubus podophyllus**, P. J. Muell.—9.

1894. Norland.

**Rubus echinatus**, Lindl.—48.

1833. Heptonstall Eaves.—*Herb. Gibson.*

**Rubus flexuosus**, M. and L.—10.

1862. Near Hebden Bridge.—*E. Lees and Prof. Babington.*

**Rubus Koehleri** (sp. collect.)—70.

1842. Luddenden; also var. *grandiflora*.—*Herb. Gibson.*

1894. Norland.

**Rubus fusco-ater**, Weihe—2.

1842. Crow Nest Wood.—*Herb. Gibson.*

**Rubus dumetorum**, W. and N.—59.

1842. Near Hebden Bridge.—*Herb. Gibson.*

1894. Norland—several forms including:

Var. **ferox**, Weihe—17.

1894. Norland.

Var. **diversifolius**, Lindl.—51.

1838. Near the pottery at Siddal.—*Herb. Leyland.*

**Rubus corylifolius**, Sm.—74.

1838. Near Halifax, frequent.—*Herb. Leyland.*

1842. Luddenden.—*Herb. Gibson.*

1894. Norland; “perhaps *conjungens*, Bab.”

**Rubus cæsius**, L.—62. Dewberry.

1895. Canal-side, Salterhebble.

**Rubus saxatilis**, L.—67.

Native. Scottish type. P. June-July.

1832. Turner Clough; 1837. Ogden Clough.—*Herb. Leyland.* Turner Wood, Rishworth.—*Herb. S. K.*

1864. Mytholm Clough, Hebden Bridge.—*J. Walker.*

It should be found again in these stations.

**Rubus Chamæmorus**, L.—36. Cloudberry, Knotberry.

Native. Highland type. P. Mid-June-July.

1775. On a moor above Mossleden Pasture in Rishworth, for two miles together on the ridge of the hill, in plenty.—*J. Bolton.*

1837-40. Rishworth Moor.—*Herb. King, Gibson and Leyland.*

1840. Robin Hood's Bed, Blackstone Edge.—*Baines' Flo.* Still abundant on Way Stone Edge, Rishworth Moor, from 1,500 to 1,550 ft.

**Geum urbanum**, L.—107. Wood Avens, Herb Bennet.

Native. British type. P. June-August.

1775. Hedges of some fields in Washer Lane in Skircoat; Hollins Wood in Warley; hedges adjoining Beacon Hill near Halifax; and in hedges about Ripponden.—*J. B.*

1842. Common about Luddenden.—*Herb. S. K.*

1845. By the hedge-sides and woods anywhere in the vicinity of Halifax; in the township of Stansfield; Marsh Wood and Common Wood.—*Med. Bot. Soc.*

1867. Upper Shibden, and stream-side in Sim-carr Wood.—*J. W.*

Infrequent: Walter Clough, Elland Park Wood, Luddenden, Triangle, Hebden Bridge, &c.

**Geum rivale**, L.—93. Water Avens.

Native, British type. P. May-July.

1775. In Mossleden Pasture, and here and there along the side of Ripponden Brook from Mossleden to Sowerby Bridge.—*J. B.*

1837. Ogden Clough.—*Herb. Leyland.*

1838. Denhouse Clough near Luddenden.—*Herb. S. K.*

1867. Left bank of stream in Sim-carr Wood.—*J. W.*

Infrequent, but commoner than the preceding, in woods and stream sides: Sun Wood and Coley Beck, Lightcliffe; Brookhouse; Ogden Clough; Elland Park Wood; Turner Wood and Bogden Clough, Rishworth; Crimsworth Dean; Hardcastle Crag.

× **urbanum (intermedium, Ehrh.)**—57.

Bottom of Shibden Clough.—*Herb. Leyland.*

**Fragaria vesca, L.**—111. Wild Strawberry.

Native. British type. P. May-June.

1775. Allen's Wood in Warley, Willow Hall Wood and Woodhouse Scar in Skircoat, Steps Wood in Warley.—*J.B.* Hirst Wood.—*Herb. Leyland.*

1841. Frequent about Luddenden; 1854. Warley—*Herb. S. K.* 1867. Shibden.—*J.W.*

Infrequent, in woods: Elland Park Wood, Brookhouse, Luddenden Dean, Crimsworth Dean, Hardcastle Crag, Hippings Clough.

*Fragaria elatior, Ehrh.* Strawberry.

Alien; an escape from cultivation. P. June.

1844. Hollins Wood near Luddenden.—*Herb. S. K.*  
Still there.

*Potentilla norvegica, L.*

Alien. A. June-July.

1893. Dapper Mill, Wheatley.

**Potentilla Fragariastrum, Ehrh.**—106. Barren Strawberry.

Native. British type. P. March-May.

1867. Shibden.—*J. Walker.*

Common on banks throughout the district.

[*Potentilla verna, L.*—22.

1867. Plentiful near Hipperholme.—*J. W.* An error.]

**Potentilla silvestris, Neck.**—112. (P. Tormentilla, Scop.)  
Tormentil.

Native. British type. P. May-September.

1840. Hebden Bridge.—*Herb. Gibson.*

1867. Shibden.—*J. Walker.*

Very common in banks, pastures and woods.

**Potentilla procumbens**, Sibth.—78. Tormentil.

Native. British type. P. June-September.

1775. Tenter field at Willow Hall, several fields near Skircoat Green, and near the top of Halifax town.—*J.B.*

1840. Lee Wood.—*Herb. Gibs.* 1841. Warley.—*Herb. S.K.*

Common in dry banks and moorland pastures.

**Potentilla reptans**, L.—95. Cinquefoil.

Native. British type. P. June-September.

1839. Mill House.—*J. Shepherd; Herb. Gibson.*

1867. Shibden.—*J.W.* Brighouse.—*Lees' Flo.*

Infrequent, in hedge banks and pastures: Copley, Rishworth, Hebden Bridge, Stansfield, &c.

**Potentilla Anserina**, L.—112. Silver-weed.

Native. British type. P. June-July.

1775. In some fields belonging to Woodhouse, and along the side of the canal from Woodhouse Mill to Copley Hall, in Skircoat, also in several fields in Norland near Binn Royd.—*J.B.*

1867. Shibden,—*J. Walker.*

Infrequent, usually on roadsides: Lightcliffe, Walter Clough, Elland, West Vale, Skircoat, Friendly, Rishworth.

**[Potentilla argentea**, L.—57.

Unknown. English type. P. June-July.

1775. Fields, on most heavy soils: several fields about Skircoat Green and Lee Bridge, and several other places about Halifax.—*J. Bolton.*

A sparingly distributed species for which there is no other local record. It is so distinct and easily identified as hardly to admit of confusion, so that perhaps the safest conclusion is to accept Bolton's record, and class it with *Cerastium quaternellum* as extinct. But heavy soils are not the habitat of *P. argentea*.]

**Potentilla palustris**, Scop. - 99. (Comarum palustre, L.)

Native. British type. P. July.

1775. Several places about Warley Clough; near St. Ann's Chapel (Southowram).—*J. Bolton.*

— Gorple—*Herb. Gibson.*

No recent record, but likely to be found at such places as Gorple.



**Alchemilla arvensis**, Scop.—111. Parsley Piert.

Native. British type. A. June-August.

1844. Luddenden Brook.—*S. King*.

Rare, in dry fields and waste ground: Clover Hill (a garden weed); Holdsworth, Ovenden; Hullen Edge, West Vale; Hebden Bridge, &c.

**Alchemilla vulgaris**, L.—107. Lady's Mantle.

Native. British type. P. April-September.

1775. All the fields about Upper and Lower Willow Hall in Skircoat.—*J. Bolton*.

1841. Ogden Clough.—*Herb. S.K.* 1867. Shibden.—*J.W.*  
Very common in moist pastures, banks, &c.

**Agrimonia Eupatoria**, L.—105. Agrimony.

Native. British type. P. June-August.

1775. Woodhouse Field in Skircoat; edge of the canal just above Woodhouse Mill; footpath going from Wigney's house to Woodhouse; about Rastrick in plenty.—*J.B.*

1845. "Agrimony grows in a clough near Southowram."—*Med. Bot. Soc.*

Rare: Copley (1894).

**Poterium Sanguisorba**, L.—74. Salad Burnet.

Native? English type. P. June-July.

1832. Hollins Wood, Warley.—*Herb. S.K.*

**Poterium officinale**, Hook. f.—64. (*Sanguisorba officinalis*).

Great Burnet.

Native. Intermediate type. P. July-August.

1838. Luddenden Dean.—*Herb. S. King*.

— Fields at Woodhouse in Skircoat. It formerly was plentiful on the road from Sowerby Bridge to Triangle.—*Herb. Leyland*.

1867. Top of Burnt Brow, Shibden.—*J. Walker*.

Infrequent, in damp meadows: Copley, Skircoat, Shibden, Colden Valley, Crimsworth Dean, &c.

**Rosa mollis**, Sm.—71. (*R. villosa*, L.) Apple Rose.

Native. British type. Shrub. June-July.

1775. Hollings Wood in Warley; Woodhouse Scar in Skircoat, along the hedges in Woodhouse fields.—*J.B.*

1833. Foster Mill, dam side.—*Herb. Gibson*.  
 1842. King Goit side, Luddenden; roadside between Brearley and Mytholmroyd.—*Herb. S.K. Ovenden Wood*.—*Herb. Leyland*.  
 1888. Todmorden, and Hebden Valley.—*Lees' Flo.*  
 Rare, in wooded cloughs: Crimsworth Dean.

**Rosa tomentosa**, Sm.—110.

- Native. British type. Shrub. June-July.  
 1842. Luddenden Dean.—*Herb. S. King*.  
 — Near Lumb Mill.—*Herb. Gibson*.  
 Probably not uncommon in wooded cloughs, &c.: Crimsworth Dean, Hebden Bridge; Turner Wood, Rishworth; near Firth House, Barkisland.

[**Rosa rubiginosa**, L.—62. Sweetbriar.

- Native? Extinct. English type. Shrub. July.  
 1775. Here and there in Dixon's Scar in Sowerby, near Sowerby Bridge.—*J. Bolton*.]

**Rosa sepium**, Thuill.—17.

Var. **cryptopoda**, Baker.

“It was collected by S. King, at Luddenden, in 1862. My specimen was destroyed when my herbarium was burnt in May, 1864, and I have not seen it from any other locality.”—*J. G. Baker* (1897).

**Rosa canina**, L.—112. Dog Rose.

- Native. British type. Shrub. Mid-June-July.  
 1844. Luddenden.—*S. King*. 1867. Shibden.—*J.W.*  
 Common in hedges, woods, &c. The following varieties have been observed, but the list of local roses can not be regarded as complete, as they have not been thoroughly investigated.

Var. **lutetiana**, Leman.

1897. Crimsworth Dean, Hebden Bridge; Elland Park Wood.

Var. **dumalis**, Bechst.

1840. Near Halifax.—*Baines' Flo.*

Probably common, Cragg Vale, Crimsworth Dean, &c.

**Var. vinacea**, Baker.

1888. Hebden Valley.—*F. A. Lees*, but under Var. *biserrata* (incl. *vinacea*).

1897. Crimsworth Dean.

**Var. arvatica**, Baker.

1888. Ogden Clough.—*W. Todd* and *F. A. Lees*.

1897. Turner Wood, Rishworth.

**Rosa glauca**, Vill.—24. (R. Reuteri, Godet).

1897. Elland Park Wood, a round-fruited form.—*J. G. Baker*.

**Var. coriifolia**, Fr.

1842. Lane House, Luddenden.—*Herb. S. King* (as *R. bractescens*).

**Rosa arvensis**, Huds.—69. Trailing Rose.

Native. English type. Shrub. Mid-June-July.

1839. Mill House.—*J. Shepherd*.

1842. Brierley Wood, Midgley.—*Herb. S.K.*

— Elland Park.—*Herb. Leyland*. 1867. Shibden.—*J.W.*

1877. Todmorden.—*A. Stansfield*; *Lees' Flora*.

Infrequent, in woods: abundant in Elland Park Wood; banks of Coley Beck; Crimsworth Dean, at an elevation of 500-550 ft., &c.

**Pyrus Aria**, Ehrh.—50. White Beam.

Denizen or Alien. English type. Tree. May-June.

1867. Shibden.—*J. Walker*.

Rare, in woods and plantations, perhaps always planted: Sun Wood, Lightcliffe; Grimescar Wood, Fixby; Blackburn Valley; Hollins Wood, Warley; Crimsworth Dean. In the last station it is possibly native, and the variety *P. rupicola*.

**Pyrus Aucuparia**, Ehrh.—108. Mountain Ash. "Wiggin."

Native. British type. Tree. June.

1842. About Luddenden, frequent.—*Herb. S.K.*

1867. Shibden.—*J. Walker*.

Common in woods and all the cloughs, ascending to the edges of the moors.

**Pyrus Malus**, L.—88. Wild or Crab Apple.

Native. English type. Shrub. May-June.

1840. Sowerby Dean.—*J. Shepherd*; *Herb. S.K.*

1867. Elland Wood.—*J. Walker*.

Rare, in hedges and woods: Clifton Beck, Brighouse (*P. acerba*); Elland Park Wood; Crimsworth Dean; Hardcastle Crags.

**Crataegus Oxyacantha**, L.—111. Hawthorn. “May.”  
Native. British type. Tree. May-June.

1844. Luddenden.—*S. King*. 1867. Shibden.—*J.W.*

Very common, in hedges, woods, &c., but often planted.  
The var. *C. monogyna* is the prevailing form.

#### SAXIFRAGEÆ.

*Saxifraga umbrosa*, L. London Pride.

Alien. P. June.

1867. Hilly part of Howcans Wood, Shibden.—*J.W.*

An occasional escape or outcast from gardens.

**Saxifraga granulata**, L.—78. Meadow Saxifrage.

Denizen. British type. P. May-June.

Since 1890 in a meadow at Booth, Luddenden Dean. Not obviously a garden outcast, but at least suspicious-

[**Saxifraga hypnoides**, L.—46. Mossy Saxifrage.

Native? Extinct. Scottish type. P. May-July.

1775. In several fields about Warley Clough, as on the edges of the Gigg Mill dam on the Skircoat side.—*J.B.*  
No record since.]

**Chrysosplenium oppositifolium**, L.—107. Golden Saxifrage.

Native. British type. P. March-May.

1775. See the next species. 1840. Luddenden.—*S. King*.

1867. Scout Wood and Upper Shibden.—*J. Walker*.

Very common in all the cloughs on wet banks, dripping rocks, &c., most abundant west of Halifax, but also found in Elland Park Wood, Coley, Shibden, &c.

**Chrysosplenium alternifolium**, L.—70. Golden Saxifrage.

Native. British type. P. April-June.

1775. In moist places about Halifax, along with the common Golden Saxifrage; in Steps Wood in Warley, and towards the bottom of Binn Royd Clough in Norland.—*J. Bolton*.

1837. Pennant's Clough, near Todmorden.—*Herb. Leyland.*  
 1838. Binn Royd Clough, Norland.—*Herb. King*, and *Leyl.*  
 Rare: only observed recently in marshy ground at Higher Greenwood, in the Hebden valley.

*Ribes Grossularia*, L. Gooseberry.

Denizen or Alien. Intermediate type. Shrub. April-May.

— Banks of the Calder, &c., not wild.—*Herb. Leyland.*

Occasionally found in places where it is probably bird-sown: Elland Park Wood, Hippings Clough, Stansfield, &c.

#### CRASSULACEÆ.

**Cotyledon Umbilicus**, L.—54. Navelwort.

Denizen. Atlantic type. P. June-July.

1819. At Lower Cragg, near Mytholmroyd.—*Herb. Leyland.*

1835. Lane House, Luddenden.—*Herb. S.K.*

1840. On the roadside near Old House, Sowerby, &c.—*Baines' Flo.*

1862. Near Lane House and Owlet Cote in Midgley; Holme House, near Warley (*C. Eastwood*); Greetland.—*Mialls' Flo.*

1867. Old wall, top of Luddenden Valley.—*J. Walker.*

1877. About Catholes Dam, Harley Wood near Todmorden, probably planted.—*A. Stansfield.*

1888. Cragg Valley, Mytholmroyd.—*F. A. Lees.*

Though the stations recorded are rather numerous, it is not generally held to be a native. Still at Jowler, in the Luddenden Valley, on the Warley side, and previous to the severe winter of 1894-5, it grew at Cat-i'-th' Well, but suspiciously near the garden.

**Sedum acre**, L.—107. Stonecrop.

Native? British type. P. June-July.

1845. White Hill end, near Hebden Bridge.—*Herb. S.K.*

Infrequent on walls, &c., but, except where it is planted about cottages, it is rarely seen and is more like a casual escape than a native. Like *Erophila vulgaris*, it seems to disappear near manufacturing towns.

*Sempervivum tectorum*, L. Housleek.

Alien. P. July.

1775. On several houses at Lower Lumb in Sowerby, and on the house and walls at Ball Green, near Sowerby Town.—*J.B.*

Occasionally seen on cottage roofs and walls.

#### DROSERACEÆ.

***Drosera rotundifolia*, L.—109.** Sundew.

Native. British type. P. July-August.

1775. With the next. 1847. Castle Carr.—*Herb. S.K.*

1862. Blackstone Edge, *C. Eastwood*; Norland Moor.—*Miall's Flo.* 1867. Norland Moor.—*J.W.*

1888. Todmorden Moors.—*A. Stansfield* and *F. A. Lees.*

In moorland bogs, amongst *Sphagnum*; it is known on Norland Moor, Rishworth Moor, Erringden Moor, Wadsworth Moor, Midgley and Warley Moors (Kat i'th' Well), and no doubt occurs in many other less accessible stations.

***Drosera anglica*, Huds.—55.** Sundew.

Native. Scottish type. P. July-August.

1775. In high wet moorish places, as the top of Warley Moor, and in plenty along with the round-leaved Sundew on Blackstone Edge, about a mile from the road on the right-hand side going from Halifax to Rochdale.—*J.B.*

1832. Top of Blackstone Edge.—*Herb. Leyland, King, and Gibson.*

1877. Robin Hood Bed, Blackstone Edge, formerly, failed to find it two years ago.—*A. Stansfield, Lees' Flo.*

No record since, but not necessarily extinct.

#### HALORAGÆÆ.

***Hippuris vulgaris*, L.—90.** Mare's tail.

Native. British type. P. July.

1775. In a piece of very unsound land near Mixenden Mill; in Norland about the edge of Old-house Mill dam.—*J.B.*

***Myriophyllum alterniflorum*, DC.—80.** Milfoil.

Native. British type. P. June-July.

1888. Canal near Halifax.—*F. A. Lees.*

Still in the Canal at Salterhebble.

***Callitriche stagnalis*, Scop.—93.** (*C. platycarpa*, Kütz).

Water Starwort.

Native. British type. P. June-September.



1841. Popple Wells, Warley.—*Herb. S. K.*

Common in shallow streams, ditches, ponds, etc., from the canal at Salterhebble to the tops of the moors.

**Callitriche hamulata**, Kütz—? (incl. *pedunculata* DC.)

Native. British type. P. July.

1834. Midge Hole Lane, (*pedunculata*).—*Herb. Gibson.*

1832. Foster Mill dam, (*autumnalis*, Hook).—*Herb. Gibson.*

Infrequent, or rare: Copley, Warley.

#### LYTHRARIÆ.

**Peplis Portula**, L.—98. Water Purslane.

Native. British type. A. July-August.

1834. In a field near Hollins Mill, Warley.—*Herb. Leyl.*

No recent record, but doubtless occurs occasionally in ditches or moist places.

[**Lythrum Salicaria**, L.—92. Loosestrife.

Native, extinct. English type. P. August.

1775. In a meadow near Hebden Bridge, and in a field near Todmorden.—*J. Bolton.*]

#### ONAGRARIÆ.

**Epilobium angustifolium**, L.—96. Rose-bay.

Native. British type. P. July-August.

1775. About Woodhouse in Skircoat; between Elland and Brighouse along the sides of the River Calder.—*J. B.*

1840. On the banks of the river Calder, both above and below Copley Mill, where it has grown for many years, but cannot be considered indigenous in that situation.—*Baines' Flora.*

1867. Banks of canal near Salterhebble.—*J. Walker.*

1888. North Dean.—*W. West; Lees' Flora.*

Still in the valley bottom from Copley to Elland; also in the upper part of Elland Park Wood (true *angustifolium*); at Park Nook; on the edge of Greetland Moor, and at Hardcastle Crags. The garden variety also occurs in a few stations.

**Epilobium hirsutum**, L.—96. Hairy Willow-herb. Cod-lins-and-Cream.

Native. English type. P. July-August.

1775. In a marshy field near Woodhouse in Skircoat (as *E. ramosum*).—*J. Bolton,*

1832-39. Canal banks, Skircoat.—*Herb. King & Gibson.*

1867. Banks of canal near Copley.—*J. Walker.*

Common along and near the banks of the canal and river : Elland, Copley, near Bird Cage in Skircoat, Sowerby Bridge, Luddenden Foot, Mytholmroyd, Hebden Bridge, and probably to Todmorden.

**Epilobium parviflorum**, Schreb.—103. Willow-herb.

Native. British type P. July-August.

1775. In marshy places along the borders of Warley Clough, near the Shear Mill dam and just by the head of the Gigg Mill dam, (as *E. hirsutum*).—*J. Bolton.*

No recent record, though it doubtless occurs in wet places in some of the cloughs, but has been mistaken for *E. montanum*. Leyland's herbarium contains a specimen from the Lancashire boundary.

**Epilobium montanum**, L.—112. Willow-herb.

Native. British type. P. June-September.

1844. Luddenden Brook.—*S.K.* 1867. Shibden.—*J.W.* Very common on damp shady walls and banks, especially in the wooded cloughs.

**Epilobium roseum**, Schreb.—46. Willow-herb.

Native. English type. P. July-August.

Rare, no record before 1895: on the canal banks from Halifax to Salterhebble and Elland, and as a garden weed near Shaw Hill.

**Epilobium obscurum**, Schreb.—97. Willow-herb.

Native. British type. P. July-August.

1840. Lane House, Luddenden, (as *E. tetragonum*)—*Herb. S.K.*

Infrequent, in ditches and damp ground: Shaw Syke, by the canal from Copley to Elland, Elland Park Wood, Wheatley, Rishworth, &c.

**Epilobium palustre**, L.—110. Willow-herb.

Native. British type. P. July-September.

1834. Ogden Clough.—*Herb. Leyland.*

1840. Old Cut, Norland; Castle Carr.—*Herb. S.K.*

1888. Todmorden.—*Lees' Flora.*

Common, in bogs and ditches on the moors: Hipperholme, Luddenden, Wadsworth, Crimsworth Dean, Heptonstall Moor, &c.

**Circæa lutetiana**, L.—103. Enchanter's Night shade.

Native. British type. P. July-August.

1841. Hive House Clough, Luddenden.—*Herb. S K.*

A very common species in the woods about Halifax.—*Herb. Leyland.* Hirst Wood.—*Herb. Gibs.*

1867. Upper Shibden.—*J. Walker.*

1888. Todmorden, Hebden Bridge, &c.—*F. A. Lees.*

In damp places in many of the woods, but not very abundant: Elland Park Wood, Stainland, Copley, Norland, Wheatley, and Colden Clough are additional localities.

**Circæa alpina**, L. Var. **intermedia**, Ehrh.—34.

Native. Intermediate type. P. July-September.

1775. Several places about Warley Clough; a lane behind Scars-head in Norland; Cliffscar Wood near Rastrick, and several other parts of the parish. (as *C. alpina*.)—*J. Bolton.*

1821. Richardson's Wood near Ripponden; woods near Sowerby Bridge.—*Herb. Leyland.*

1837-44. Ellenholme Lane, Sowerby; Dean House Wood, Luddenden; a common weed in Cliffe Hill garden, Warley.—*Herb. S.K.*

An interesting plant, very sparingly distributed in West Yorkshire. Still existing, though it has only been found recently in Dean House Wood (1885), and as a garden weed at Hove Edge, Lightcliffe 1896.

#### UMBELLIFERÆ.

**Hydrocotyle vulgaris**, L.—110. Marsh Pennywort.

Native. British type. P. June-July.

1838. In Sowerby, opposite Longbottom Mill —*Herb. S.K.*

1867. Ogden.—*J. Walker.*

Common in wet places in the cloughs ascending to the moors: Ogden Clough, Luddenden Dean, Sowerby Moor, Rishworth, Cragg Vale, Crimsworth Dean, Hebden Bridge, Widdop, &c.

**Sanicula europæa**, L.—109. Wood Sanicle.

Native. British type. P. May-July.

1775. In Hollings Wood in Warley, Dixon's Scar in Sowerby, and hedges about Warley Clough.—*J.B.*

— Hirst Wood, Hebden Bridge.—*Herb. Gibson.*

1841. Hive House Clough, Luddenden.—*Herb. S.K.*

1867. Above Colder's Pit, Shibden. *J. Walker.*

Infrequent, but widely distributed: Sun Wood in Shelf, Upper Shibden, Ogden Clough (above 1,000 feet), Luddenden Dean, Cragg Vale, Heptonstall, Hippings Clough and Stanelly Clough in Stansfield.

**Conium maculatum**, L.—104. Hemlock.

Native. British type. B. July.

— Roadsides near Halifax, not common.—*Herb. Leyl.*

Rare: Norland Clough side (1887), is the only recent record.

**Bupleurum rotundifolium**, L.—39. Hare's Ear.

Casual. Germanic type. A. July.

1838. Sterne Mill.—*Herb. Gibson.*

1895-6. On waste ground near malt-kilns at Elland.

**Carum Carui**, L. Caraway.

Alien. B. July.

1853. In Lane House garden, Luddenden.—*Herb. S.K.*

**Sium erectum**, Huds.—81. (*S. angustifolium*. L.)

Native. English type. P. July-September.

Rare; first record 1895, in a ditch close to the highroad near Greetland Station.

**Ægopodium Podagraria**, L.—100. Goutweed.

Native or Denizen. British type. P. June-August.

1775. In a lane at the back of Trimmingham in Skircoat; about Hebden Bridge, in the highroad side.—*J.B.*

1824. Kershaw House near Luddenden.—*Herb. Gibson.*

1832. Barkisland.—*Herb. S.K.*

Infrequent, in damp shady situations and waste ground near houses: Sun Wood, Shelf; Hipperholme (garden); Allan Gate, King Cross; Norland; Heptonstall.

**Pimpinella Saxifraga**, L.—102. Burnet Saxifrage.

Native. British type. P. July-September.

1838. Luddenden Dean.—*Herb. S.K.*

Infrequent, in pastures: Coley Beck, Northowram, Bradshaw, Southowram, Elland, Stainland, Salterhebble, Copley, Warley, Luddenden Dean and Hebden Bridge.

**Pimpinella major**, Huds. 51.

Native. English-Germanic type. P. July—August.

Rare, in woods and hedges, first record 1887: Elland Park Wood, Norland, Mytholmroyd, and Midge Hole, Hebden Bridge.

**Conopodium denudatum**, Koch—108. (*Bunium flexuosum*, With.) Earth-nut. 'Hairy' or 'Airy-nut.'

Native. British type. P. May-July.

1867. Shibden.—*J. Walker*.

Very common in meadows and pastures throughout the Parish.

**Myrrhis odorata**, Scop.—65. Sweet Cicely.

Native or Denizen. Intermediate type. April-June.

1833. Smithy Clough and Hollins Wood, abundant; Ripponden.—*Herb. S.K.*

1837. Turner Clough in Rishworth. On the banks of the Calder at Sterne Mill Bridge and in many other similar situations, but more abundantly towards the head of the stream at Meg's Scar near Ripponden.—*Herb. Leyland*.

— Calder banks, Sowerby Bridge.—*Herb. Gibson*.

1888. Hebden valley.—*F. A. Lees*. Calder banks, North Dean.—*J. W. Davis* and *F. A. Lees*.

Frequent and often abundant, in woods and by stream sides: by the canal from Rastrick to North Dean, Blackburn valley, Norland Clough, Rishworth, Wheatley valley, Luddenden Dean, Cragg Vale, Crimsworth Dean, Colden valley, &c. Regarded by H. C. Watson as a denizen in Britain, as it was formerly cultivated as a pot-herb, but no plant has more the appearance of a native here. Passed over for some reason by the earlier botanists, including Bolton.

**Chærophylloides temulum**, L.—99. Chervil.

Native. British type. B. June-August.

Rare, in hedge-banks and waste ground; no record before 1893: Sun Wood in Shelf, Shibden, Elland, Hebden Bridge.

**Scandix Pecten-Veneris**, L.—93. Shepherd's Needle.

Colonist. British type. A. June-August.

Infrequent, in cornfields and waste ground; Elland, Sterne Mill, King Cross, &c.

*Anthriscus vulgaris* Bernh.—79. Beaked Parsley.

Casual. British type. A. May—June.

[1867. Shibden.—*J.W.* Probably the next is intended.]

Not in Bolton's Catalogue, as stated in *Lees' Flora*, but *Caucalis Anthriscus* is. Hardly seems a native, as it has only been found once, at Sterne Mill (1894).

**Anthriscus sylvestris**, Hoffm.—107. Beaked Parsley.

Native. British type. B, or P.. April—June.

1840. In meadows near Halifax, frequent.—*Baines' Flo.*

1844. Luddenden Brook.—*S. King.*

Very common in meadows, hedgebanks, and woods.

[*Ænanthe fistulosa*, L.—68. Water Dropwort.

Unknown. English type. P. July.

1775. In and about Warley Clough; many places by the sides of Ripponden Brook, in Soyland, Sowerby, Norland, &c.—*J. Bolton.*

There is no later evidence of the existence of this species about Halifax, and Bolton's plant was probably *Æ crocata*. There are undoubtedly a few errors in Bolton's list, and here he may have been misled by Hudson, who limited the distribution of *Æ crocata* to the south of England.]

**Ænanthe crocata**, L.—92. Hemlock Dropwort, Cowbane.

Native. British type. P. June—August.

1830. Near Copley Mill.—*Herb. Leyland.*

1840. Near Halifax, but throughout the whole of that extensive parish the preceding species does not occur.—*Baines' Flora.*

1841. Common about Luddenden.—*Herb. S. King.*

1888. Hebden Valley.—*F. A. Lees.*

Infrequent, in ditches and wet ground: Tag Lock, Elland; Barkisland, Copley dikes, Luddenden Foot, Brearley Wood, Crimsworth Dean, Higher Greenwood, Heptonstall.



**Æthusa Cynapium**, L.—96. Fool's Parsley.

Native. British type. A. July—August.

1862. Ovenden Common; Skircoat.—*Miall's Flora*.

1867. Swales Moor, Shibden; and waste places near Skircoat.—*J. Walker*.

Infrequent, in or near cultivated ground: Shaw Syke, Elland, Copley, Hebden Bridge, &c.

**Meum Athamanticum**, Jacq.—29. Spignel.

Native. Scottish type. P. June.

1724. On the banks of a moist meadow, Scamonden.—*Richardson; Ray's Synopsis*.

1775. In rough pastures about half a mile above Katty's Well in Warley, on the right-hand side of the brook.—*J. B.*

1830 and 1840. Booth Dean.—*Herb. S. King*.

1834. Near Solomon's Temple, Booth Dean.—*Herb. Gibs.*

1840. At the Booth in Rushworth, formerly plentiful, now nearly eradicated.—*Herb. Leyland*.

1844. Booth Dean. The only specimen to be found, the ground being planted with potatoes, where it used to grow.—*Herb. S. K.*

It has not been found since.

**Angelica sylvestris**, L.—111. Wild Angelica.

Native. British type. P. July—August.

1775. Along the whole borders of Warley Clough, and by the River Calder in Warley and Skircoat.—*J. B.*

1832. Common about Luddenden.—*Herb. S. K.*

Common in moist woods: Elland Park Wood, Rishworth, Hebden Bridge, &c.

**Peucedanum Ostruthium**, Koch. Master-Wort.

Alien. P. July—August.

— Wadsworth.—*Herb. Gibson*.

Occasionally found near cottages; formerly, and perhaps still, used as a rustic medicine.

**Peucedanum sativum**, Benth.—57. Wild Parsnip.

Casual. English type. A or B. July—August.

1845. Hopwood Lane.—*Med. Bot. Soc.*

1896. Rishworth. Not likely to be native here.

**Heracleum Sphondylium**, L.—112. Cow Parsnip.

Native. British type. B. or P. June—August.  
 1832. Common about Luddenden.—*Herb. S. King.*  
 1867. Near the Paddock, Shibden.—*J. Walker.*  
 Very common in moist woods, hedge banks, and waste places; very abundant and well-grown in Elland Park Wood.

**Daucus Carota**, L.—109. Wild Carrot.

Native. British type. A. or B. July—August.  
 1775. In some pastures adjoining Duel (Tuel) Lane in Warley, and in the banks belonging to Broadgates in Skircoat.—*J. B.*  
 Cornfields about Luddenden, not common.—*Herb. S. K.*  
 Infrequent, on banks and waste ground: Elland, Copley, Mytholmroyd.

**Caucalis latifolia**, L.—7. Casual. A. July.

1890. On waste ground, Elland.

**Caucalis daucoides**, L.—28.

Casual. Germanic-English type. A. July.  
 1890. At Elland, with the preceding. 1895. In various waste places about Elland.

**Caucalis Anthriscus**, Huds.—107. Hedge Parsley.

Native. British type. A. July—August.  
 1775. Hedges in Steps fields in Warley; about Woodhouse in Skircoat.—*J. Bolton.* Wadsworth.—*Herb. Gibson.*  
 Rare, in hedges, &c.: Elland, and Sun Wood, Shelf.

**Caucalis nodosa**, Scop.—73.

Native. English type. A. May—July.  
 1775. In cultivated fields about Lightcliffe and Southowram.—*J. Bolton.*  
 No other record, but it may possibly be found again in such stations at a low level.

## ARALIACEÆ

**Hedera Helix**, L.—112. Ivy.

Native. British type. P. October—November.  
 — Common about Luddenden.—*Herb. S. King.*  
 1867. Shibden.—*J. Walker.*

Common, in woods, not often climbing the trees, but on the ground.

## CAPRIFOLIACEÆ.

**Adoxa Moschatellina**, L.—91. Moschatel.

Native. British type. P. April—May.

1827. Mayroyd, near Hebden Bridge.—*Herb. Leyland*.

From the same locality in *Herb. King* and *Gibson*; still exists just over the border, if not within the parish.

**Sambucus nigra**, L.—109. Elder.

Native. British type. Tree. June.

1839. Several places about Luddenden.—*Herb. S. K.*

1867. Near Scout Hall, Shibden.—*J. Walker*.

Common in woods and waste places.

**Sambucus Ebulus**, L.—77. Dwarf Elder. Dane-wort.

Denizen. English type. P. August.

1836. At Stubbing, in the township of Stainland.—*Herb. Leyland*.

1852. In the garden at the Hollins, Warley.—*Herb. S. K.*

Rare: by the canal at Salterhebble (since 1886).

**Viburnum Opulus**, L.—101. Guelder Rose.

Native. British type. Shrub. June—July.

— Chilburn meadow.—*Herb. Gibson*.

Infrequent in woods: Sun Wood, Shelf; Elland Park Wood; Tag Lock, Elland; Copley; Hebden Bridge; Hippings Clough, Stansfield.

**Lonicera Periclymenum**, L.—112. Honeysuckle.

Native. British type. Shrub. June—August.

1840. Common about Luddenden.—*Herb. S. K.*

1867. Scout Wood, Shibden.—*J. Walker*.

Common in woods, in most of the cloughs, and ascending above 1,000 feet in Greave Clough, Widdop.

## RUBIACEÆ.

**Galium Cruciata**, Scop.—97. Crosswort.

Native. British type. P. May—June.

1775. An ornament to most of our hedges about Halifax; at the top of the Tenter-field at Pye Nest, in Skircoat, under the hedge, are a good many fine plants.—*J. B.*

1845. Fixby and Birchcliff.—*Med. Bot. Soc.*

1867. Near Water Scout, Shibden.—*J. Walker.*

Rare, in hedges : Bailiffe Bridge and Lightcliffe.

**Galium verum**, L.—111. Yellow Bedstraw.

Native. British type. P. July—August.

Hirst Wood.—*Herb. Gibs.* Near Brighthouse.—*Herb. Leyl.*

1845. Ladies Bedstraw grows near Shaw Hill and High Sunderland.—*Med. Bot. Soc.*

Infrequent, in banks : Southowram.

**Galium saxatile**, L.—111. Bedstraw.

Native. British type. P. June—July.

1867. Shibden.—*J. Walker.*

Very common, on rough banks, rocks, and moorland pastures.

**Galium palustre**, L.—112. Var. **Witheringii**, Sm.

Native. P. July—August.

Common, in ditches and swamps, throughout the parish.

Not positively recorded before 1887.

**Galium Aparine**, L.—112. Goose-grass. Cleavers.

Native. British type. A. June—July.

1844. Luddenden Brook.—*S. King.*

1845. Elland Wood and Shibden.—*Med. Bot. Soc.*

1867. Shibden.—*J. Walker.*

Infrequent, in hedges and waste places : Elland, Copley, Hebden Bridge, &c.

*Galium tricornis*, Stokes—43.

Casual. Germanic type. A. June—September.

1896. Elland, on waste ground, near malt-kilns.

**Asperula odorata**, L.—106. Woodruff.

Native. British type. P. May—July.

1775. In many woods and rough places, such as Woodhouse Wood, and a wood belonging to Willow Hall, both in Skircoat ; also Allen's Wood, in Norland.—*J. Bolton.*

Woods near Halifax, frequent.—*Herb. Leyland.*

Hirst Wood.—*Herb. Gibson.*

1867. Plentiful on the banks of Red Beck, Shibden.—*J. W.*

Frequent, in woods: Coley Beck, Elland Park Wood, Norland Stream, Wade Wood, Rishworth, Cragg Vale, Crimsworth Dean, Hardcastle Craggs, Colden Clough, Hippings Clough, Stanelly Clough, &c.

*Asperula arvensis*, L.

Casual. July—September.

1843. Between Brighthouse and Sowerby Bridge.—*S. Gibson*.

1896. Cunning Corner, Rishworth, on cotton waste.

**Sherardia arvensis**, L.—109. Field Madder.

Colonist. British type. A. June—September.

In cornfields, not common about Halifax.—*Herb. Leyl.*

Rare, and usually on waste ground: Wheatley, Elland.

#### VALERIANEÆ.

**Valeriana dioica**, L.—73. Marsh Valerian.

Native. English type. P. End of May—June.

Near Mixenden, in a boggy field near the brook.—*Herb. Leyland*.

Rare, in marshy ground: Gosport Clough, Stainland: Hollock Lea, Cragg Vale; Crimsworth Dean.

**Valeriana sambucifolia**, Willd.—? (*V. officinalis*, L.)  
Valerian.

Native. British type. P. June—August.

1845. Between Sowerby Bridge and Elland, and in Shibden.—*Med. Bot. Soc.*

1867. Abundant on margins of streams in Shibden.—*J. W.*  
Common in damp woods and stream-banks throughout the parish.

**Valerianella olitoria**, Poll.—99. Lamb's Lettuce.

Colonist. British type. A. May—July.

Washer Lane, near Halifax.—*Herb. Gibson*.

Rare, in cultivated or waste ground: Lightcliffe; Tag Lock, Elland; Copley.

#### DIPSACEÆ.

**Scabiosa succisa**, L.—112. Devil's bit.

Native. British type. P. July—September.

1780. About Halifax.—*J. Bolton; History of Fungusses, I. xv.*

1839. Butterworth End, Norland.—*J. Shepherd; Herb. Gibs.*

1839. Luddenden, common.—*Herb. S.K.*

1867. Upper Shibden.—*J. Walker.*

Frequent in pastures on the hills: Coley Beck, Hove Edge, Norland, Rishworth, Cragg Vale, Warley, Luddenden Dean, Crimsworth Dean, Hardcastle Craggs, &c.

**Scabiosa arvensis**, L.—98. Field Scabious.

Native. British type. P. July—August.

1840. Littlemoor Farm, Warley.—*Herb. S. King.*

1867. Shibden and Hipperholme.—*J. Walker.*

Infrequent, in sandy banks and fields: Wyke, Lightcliffe, Hipperholme, Elland, Barkisland, Bradshaw, Warley, Luddenden, Hebden Bridge, &c.

#### COMPOSITÆ.

[**Eupatorium Cannabinum**, L.—98. Agrimony.

Native? British type. P. August.

Likely to occur, though it is, as yet, unrecorded; unless the Water Agrimony of the Med. Bot. Soc., 1845, which “grows in a clough near Southowram,” is this species.]

**Solidago Virgaurea**, L.—109. Golden Rod.

Native. British type. P. July - August.

1724. In the road from Halifax towards Richlay (Keighley).—*Mr. Newton; Ray, Syn.*

1775. In woods and hedges in many parts of this parish; in rough places about the Lee Bridge; in Woodhouse Wood, and Woodhouse Scar in Skircoat.—*J. Bolton.*

1830. Frequent about Luddenden.—*Herb. S.K.*

1867. Below Water Scout, Upper Shibden.—*J. Walker.*

Common in banks and cloughs: Elland Park Wood, Calder banks, Stainland, Barkisland, Rishworth, Cragg Vale, Luddenden Dean, Hebden Valley, Widdop, &c.

**Bellis perennis**, L.—112. Daisy.

Native. British type. P. All the year, chiefly May-June.

Very common in fields, &c. No definite record before 1887!

[**Filago germanica**, L.—96. Cudweed.

Native? British type. A. July—August.



Frequent.—*Herb. Leyland.* This is probably a local specimen, and though as a rule, examples in the various herbaria are not here enumerated, when the exact locality is not given, though obviously relating to the parish, an exception is made in this case, as there is no other record. It is not likely to be altogether absent.]

**Antennaria dioica**, R.Br.—86. Catsfoot. Mountain Cudweed. Mountain Everlasting.

Native. Scottish type. P. May—July.

1775. Upon High-road Well Moor; on Norland Moor, and in plenty in some rough pastures at Fly Brass in Warley; in a wood called Snake Hill, near Halifax.—*J.B.*

1837. Skircoat Moor, and other moors near Halifax, frequent.—*Herb. Leyland.*

1841. About Ogden Clough.—*Herb. S.K.*

1867. Ogden.—*J.W.*

1877. Mount, Stiperden Cross.—*A. Stansfield.*

Rare, in moorland pastures: Erringden, Midgley, Ogden, &c. Gone from Skircoat Moor and High-road Well.

**Gnaphalium uliginosum**, L.—111. Marsh Cudweed.

Native. British type. A. July—September.

1844. Luddenden Brook.—*S. King.*

In Wadsworth.—*Herb. Gibs.*

Infrequent, but not uncommon in damp places on light soil, such as waste or cultivated ground: Skircoat, Halifax, Copley, Salterhebble, Norland, Elland, Shibden, Holmfield, Rishworth, &c.

**Gnaphalium sylvaticum**, L.—102.

Native. British type. P. July—August.

1775. In a lane leading from Skircoat Moor end to Skircoat Green, being the only place I ever saw it in.—*J.B.* Wadsworth.—*Herbs. Gibs.*

Skircoat Moor, &c., not uncommon.—*Herb. Leyl.*

Rare, in pastures or banks: Crimsworth Dean (1896). Gone from Skircoat Moor, which is greatly changed, even in name (Savile Park), since Leyland's time.

[**Inula Helenium**, L.—? Eleocampane.

Denizen. English type? P. July—August.

1834. Mayroyd, Hebden Bridge.—*Herb. Gibson*.  
Probably introduced, formerly cultivated.]

**Pulicaria dysenterica**, Gærtn. - 79. Fleabane.

Native. English type. P. July—September.

1775. In a field near Broadgates in Skircoat, called Priest Karrs; and in the next holm but one above Woodhouse Mill in Skircoat.—*J. Bolton*.

On the roadside near Mytholmroyd.—*Herb. Leyland & King*.

1862. Greetland, Skircoat, opposite Copley Mill.—*J. Bates; Miall's Flora*.

Rare, in clay soil: in two fields above Mixenden Mill, towards Brookhouses (1890).—*G. L. Lister*.

**Bidens cernua**, L.—82. Bur-Marigold.

Native. English type. A. July—September.

1775. In a ditch upon Ball Plash near Brighouse (as *B. minima*).—*J. B.*

1867. Banks of the canal, near Washer-lane.—*J. Walker*.

1888. Canal, North Dean.—*W. West and F. A. Lees*.

**Bidens tripartita**, L.—84. Bur-Marigold.

Native. English type. August—September.

1775. In a ditch upon Ball Plash, near Brighouse.—*J. B.*

1817. At Ball Plash, near Brighouse. Houses built on the place in 1830.—*Herb. Leyland*. 1836. In a ditch between Stansfield Mill and Patmos Chapel, near Todmorden.—*Id.*

[1840. Not found in the parish of Halifax.—*Baines' Flora*.]

1888. North Dean.—*W. West; Lees' Flora*.

Abundant on the canal banks from Halifax and Copley to Salterhebble and Elland. Probably more extensive than formerly.

**Achillea Millefolium**, L.—112. Yarrow. Milfoil.

Native. British type. P. Mid-June—October.

1841. From a wall's top, Halifax.—*Herb. S. King*.

1845. On the hill tops near High Sunderland, and near Salterhebble.—*Med. Bot. Soc.* 1867. Shibden.—*J. W.*

Very common in pastures, banks, waysides, &c.

**Achillea Ptarmica**, L.—110. Sneezewort.

Native. British type. P. July—September.

1867. Ogden; Illingworth.—*J. Walker*.

Rather common, in rough, wet pastures throughout the parish.

**Anthemis Cotula**, L.—74. Stinking Chamomile.

Colonist. English type. A. July—September.

1854. Luddenden.—*Herb. S. K.* 1862. Halifax.—*Miall's Flo.*

1867. In a cornfield near Shroggs, Ovenden.—*J. Walker*.

1888. North Dean.—*W. West; Lees' Flora.*

Infrequent, in arable fields and waste ground: Shaw Syke (1886), Woodhouse, Sterne Mill, Wheatley.

**Anthemis arvensis**, L.—73. Corn Chamomile.

Colonist. English type. A. June—July.

1841. Green Hill, Warley; 1844. Luddenden.—*Herb. S. K.*

More as an infrequent casual near corn mills than as a colonist: Sterne Mill, Elland.

**Anthemis nobilis**, L.—49. Chamomile.

Casual. English type. P. July—September.

1775. On Blackstone Edge, near the junction of the old and new roads; and upon Clifton Common.—*J. Bolton*.

1841. Woodland near Luddenden.—*Herb. King and Gibson*.

Once or twice on ballast, &c. Bolton's first station, at an elevation of 1,000 feet is very unusual.

**Chrysanthemum segetum**, L.—110. Corn Marigold.

Colonist. British type. A. July—September.

1831. Very abundant at Brighouse, Lightcliffe, &c.—*R. Leyland*.

1844. Luddenden; 1856. Popple Wells, Warley.—*Herb. S. K.*

1867. Cornfield near Hipperholme, not common.—*J. W.*

Infrequent, and generally a casual on corn mill waste, as at Sterne Mill; Shaw Syke (in a garden, 1886); King Cross (garden), Elland, &c.

**Chrysanthemum Leucanthemum**, L.—112. Ox-eye. Dog Daisy. Marguerite.

Native. British type. P. June—July.

1867. Shibden.—*J. Walker*.

Common, in fields, railway and canal banks, and waste ground, mostly below 500 feet, but ascending to 1,100 ft.

***Chrysanthemum Parthenium*, Pers.** Fever-few.

Alien. P. July—September.

1840. Near Halifax.—*Baines' Flora*.

1844. Luddenden (casual).—*S. King*.

1867. On the east side of Shibden Dale; both sides of the canal, Salterhebble.—*J. Walker*.

Occasionally as a garden escape.

***Matricaria inodora*, L.—111.**

Native. British type. A. June—October.

1841. Elland.—*Herb. S.K.* 1844. Luddenden Brook.—*S. King*.

1867. Cornfields in Shibden, and very common on the railway banks.—*J. W.*

Infrequent; though not uncommon on waste ground, or railway and canal banks, in the Calder valley from Brighouse to Sowerby Bridge. Seen on rubbish on Saltonstall Moor as high as 1100 feet.

***Matricaria Chamomilla*, L.—64.** Chamomile.

Colonist. English type. A. July—August.

Not uncommon in cultivated fields from Copley to Sowerby Bridge. First record, Shaw Syke, 1886.

***Tanacetum vulgare*, L.—105.** Tansy.

Native. British type, P. July—September.

1775. In the second holm above Woodhouse Mill and on a little bank by Upper Willow Hall in Skircoat.—*J.B.*

Near Halifax, the outcast of gardens.—*Herb. Leyl.*

1888. Calder banks from Sowerby.—*Lees' Flora*.

Infrequent, and in part a casual: canal banks, Salterhebble; Norwood Green; waste ground, Wheatley.

***Artemisia vulgaris*, L.—110.** Mugwort.

Native. British type. P. July—September.

1817. Near Brighouse.—*Herb. Leyland*.

Infrequent: on the canal banks from Elland to Salterhebble and Sterne Mill; Hebden Bridge.

***Tussilago Farfara*, L.—112.** Coltsfoot.

Native. British type. P. February—May.

1775. All along the banks of the canal from Sowerby Bridge to Elland.—*J. B.* 1844. Luddenden.—*S. King*.

1845. Sides of the new road, near Godley Bridge.—*Med Bot. Soc.*

1867. Pule Hill, and near the upper water wheel, Shibden, —*J.W.*

Common, in banks and waste ground; most abundant on wet clay soil. One of the earliest occupants of newly made banks, as in the case of the canal in Bolton's time, or the new Skircoat road now, but soon largely displaced.

**Petasites officinalis**, Mœnch—105. (*P. vulgaris*, Desf.)  
Butterbur. 'Wild Rhubarb.'

Native. British type. P. March—May.

1775. *Tussilago hybrida* (the female plant) along with the common sorts in all the holms betwixt Woodhouse Mill and Copley's Mill in Skircoat. It is one of the rarest plants we have in this parish.—*J. Bolton.*

1837. *Id.* Calder banks near Copley Mill.—*Herb. Leyl.*

1842. Binroyd Clough, Norland.—*Herb. S.K.*

1867. Shibden.—*J.W.*

Common, on river and stream sides: the female plant, rarer than but growing with the other, is found in Elland Park Wood, Norland Clough, Soyland, &c.

**Senecio vulgaris**, L.—112. Groundsel.

Native. British type. A. All the year.

1844. Luddenden.—*S. King.* 1867. Common.—*J.W.*

Very common, in waste places and roadsides, gardens, &c.

**Senecio sylvaticus**, L.—107.

Native. British type. A. July—August.

1775. In several mountainous pastures in Warley, the tenter-field at Hand-green, and in a field by Hoyle's house, both in Warley.—*J.B.*

1844. About High Royd, Warley.—*Herb. S.K.*

Infrequent, on sandy ground and waste places: Woodhouse Scar, Savile Park, Shaw Syke, Salterhebble, Wheatley, Heptonstall.

**Senecio viscosus**, L.—33.

Casual. Germanic type. A. July—September.

1841. Midgley Scout, &c.—*Herb. S.K.*

1888. Railway bank, Greetland Station.—*F. A. Lees* and *J. W. Davis; Lees' Flora.*

[**Senecio erucifolius**, L.—67.

Native. Extinct? English type. P. July—Aug.

1775. In most of the fields about the Gibbet in Halifax; in the holmes going from Woodhouse to Copley's Mill; and at the back of the summer-house at Lower Willow Hall in Skircoat.—*J. Bolton*.

1840. Near Halifax.—*Baines' Flo.*

Ripponden.—*Herb. S.K*]

**Senecio Jacobæa**, L.—112. Ragwort.

Native. British type. P. July—October.

1867. Shibden.—*J. Walker*.

Very common in pastures, waste places, way-sides, &c.

**Senecio aquaticus**, Huds.—111.

Native. British type. B. or P. July—September:

1867. Upper Shibden.—*J. Walker*.

Common in wet fields and by stream sides.

[*Senecio saraceni*us, L.

Extinct Denizen. P. July—August.

1724. Halifax, towards Richay, in the road on the left hand.—*Ray, Syn. iii.* *Lees' Flora* quotes—“‘The Halifax plant is certainly *S. saraceni*us, Linn.—*R. A. Salisbury, MSS.* in his copy of *With.* Ed. ii. p. 914. Now (June 1871) belonging to me;’ *W. W. Newbould.*”]

**Carlina vulgaris**, L.—83. Carline Thistle.

Native. English type. P. June—September.

1775. In a lane going from Cote Hill to Hill-house in Warley; in some rough fields on the top of Elland Park; (but under the name *Carduus acaulos*, Dwarf Carline Thistle).—*J.B.*

Later evidence of the presence of the true Carline Thistle and of the absence of *Cnicus acaulis* so far north proves what Dr. Lees says in a letter “Bolton certainly meant *Carlina* by his ‘*Carduus acaulos*—the pretty little plant’ of Elland Park. I have a specimen of Hailestone’s from there as late as 1807 or 1812.”

Fields in Wadsworth, Midgley, Norland, &c.—*Herb. Leyl.*

1840. In a field at Upper Foot in Midgley, and fields at Norland Moor; at Cowcliffe near Huddersfield.—*Baines' Flora.*



Not found in recent years, though further search may re-discover it in old pastures in some of its former stations.

**Arctium minus**, Bernh.—91. Burdock.

Native. British type. P. July—August.

1775. About Woodhouse Scar in Skircoat; about Gibbet Hill in Halifax; and upon and about Beacon Hill.—*J.B. Mayroyd Wood, Hebden Bridge.*—*Herb. Gibson.*

1854. Roadside, Lane House, Luddenden.—*Herb. S.K.*

1867. Wheatley valley; near Godley Bridge; fields near Cromwell Wood in Southowram.—*J.W.*

Infrequent, in woods and waste ground; Fixby Park; Hove Edge, Lightcliffe; Ovenden; Washer Lane, Skircoat; High Road Well; Luddenden Dean; Hebden Bridge. The older records are under the aggregate—*A. Lappa.*

[*Carduus nutans*, L.—75. Musk Thistle.

Casual. English type. B. July—September.

1856. Luddenden Mill yard.—*Herb. S.K.* Not native.]

[**Carduus crispus**, L.—87. Welled Thistle.

Native? British type. A or B. June—August.

1867. Meadows and pastures, Ogden.—*J. Walker.*

The only record not only for Halifax, but apparently for the Calder valley; but as the three common native thistles are all named in the same list, and *C. crispus* might reasonably be expected to occur here, there seems no other reason to doubt the record, but confirmation is desirable.]

**Cnicus lanceolatus**, Willd.—112. Spear Thistle.

Native. British type. B. July—August.

1867. In the Ogden Cloughs.—*J. Walker.*

Common in waste places, fields, &c.

**Cnicus palustris**, Willd.—112. Marsh Thistle.

Native. British type. B. June—August.

1867. Wet places in the Ogden Cloughs.—*J. W.*

Common in ditch sides, marshy fields, and damp moorland pastures.

**Cnicus heterophyllus**, Willd.—58. Melancholy Thistle.

Native. Scottish type. P. July—August.

1775. In a lane leading from Hoin's Dye-house towards Illingworth in Ovenden Wood. Nowhere else.—*J. B.*  
 1805. Between Halifax and Blackstone Edge.—*Rev. W. Wood, Botanist's Guide.*  
 1832. Near Dean Head, Barkisland.—*Herb. S. K.*  
 Fields in Ovenden Wood. The same station as mentioned in Watson's History of Halifax (1775).—*Herb. Leyland.*  
 Rare, by stream sides, and in woods and pastures : Cragg Vale ; and in the Colden Valley, both near Mytholm and higher up at Strines Farm.

[*Cnicus acaulis*, Willd. See *Carlina vulgaris*.]

**Cnicus arvensis**, Hoffm.—112. Thistle.

- Native. British type. P. June—August.  
 1867. Meadows near the Peat pits, Ogden.—*J. Walker.*  
 Common in fields and waste places.

Var. *setosus*, Bess. Alien.

1887—9. West Vale Station.

1896. On corn-mill refuse, Elland.

**Centaurea nigra**, L.—111. Hard-heads, Knapweed.

- Native. British type. P. June—August.  
 1867. Shibden.—*J. Walker.*

Very common in meadows and pastures.

[**Centaurea Scabiosa**, L.—82. Great Knapweed.

- Native. British type. P. July—September.  
 1775. Only in a field belonging to Hand Green Farm, near Causey Head in Warley.—*J. Bolton.*  
 1836. Hangingroyd Mill, Hebden Bridge.—*Herb. Gibson.*  
 No record since, and now perhaps extinct in a district never favourable for its maintenance.]

**Centaurea Cyanus**, L.—95. Corn-flower. Bluebottle.

- Colonist. British type. A. July—August.  
 1844. Luddenden Brook dam-stones.—*S. King.*  
 1867. Upper Shibden, and in Old Lane.—*J. W.*  
 Infrequent, and usually as a casual on waste ground rather than in cornfields; Sterne Mill; canal bank, Copley; Skircoat Road, Halifax; Lightcliffe.

***Centaurea Calcitrapa*, L.—17. Star Thistle.**

Casual. English type. B. July—August.

1888. Cornfield at Brighthouse.—*W. West; Lees' Flora.*

1895—6. On refuse from malt-kilns at Elland.

***Centaurea solstitialis*, L. Barnaby Thistle.**

Alien. A. July—August.

Occasionally found on corn-mill refuse, &c.: Sterne Mill (1888), Elland, Hipperholme Station.

***Cichorium Intybus*, L.—65. Chicory.**

Casual. English type. P. July—August.

1852. Lane House, Luddenden.—*Herb. S. K.*

Another straggler from other parts of England, found occasionally in the same stations, but not to be ranked even as a colonist.

***Lapsana communis*, L.—112. Nipplewort.**

Native. British type. A. July—September.

1844. Luddenden Brook.—*S. King.*

1867. Woods in Shibden, common.—*J. Walker.*

Common in woods, hedge-banks, and waste ground.

***Crepis virens*, L.—110. Meadow Hawk's-beard.**

Native. British type. A. June—September.

1867. Woods in Shibden, common.—*J. Walker.*

Common in fields, banks, &c.; Hipperholme, Norwood Green, Warley, Norland, Luddenden, Hebden Bridge, &c.

***Crepis paludosa*, Mœnch.—62. Marsh Hawk's-beard.**

Native. Scottish type. P. June—August.

Burnt-brow Clough in Shibden Dale, Turner Clough.—*Herb. Leyland.*

1840. Ogden Clough.—*Baines' Flora.*

1842. Common about Luddenden.—*Herb. S. K.*

1888. Hebden Bridge.—*A. Stansfield and F. A. Lees.*

Rather common by stream sides in the cloughs: Stainland, Luddenden Dean, Cragg Vale, Erringden, Crimsworth Dean, Hardcastle Craggs, Colden Valley, &c. Absent about Halifax, Elland, and Lightcliffe.

**Hieracium Pilosella**, L.—110. Mouse-ear Hawkweed.

Native. British type. P. May—September.

1845. "Mouse Ear grows between Bird Cage and Skircoat Green."—*Med. Bot. Soc.*

1867. Shibden and Ogden.—*J. W.*

Common in dry fields and banks throughout the Parish.

*Hieracium aurantiacum*, L. Alien.

A garden plant occasionally escaping: Stoney Royd Cemetery (1892).

[*Hieracium dubium*, L. Alien.

1775. A few plants in a field near Mixenden Chapel, and nowhere else in this Parish.—*J. Bolton.*

Bolton's plant might be *H. dubium* (now omitted from the London Catalogue) or perhaps *H. aurantiacum*; but both his remarks on its distribution and the description of it in Hudson, preclude the possibility of it being *H. Pilosella*, to which it is referred in Lees' Flora.]

**Hieracium vulgatum**, Fr.—agg. 90. Hawkweed.

Native. British type. P. June—August.

Near Halifax, but not very common.—*Herb. Leyland.*

1841. Ripponden, New Bank.—*Herb. S. K.*

Very common on rocks, banks, and rough ground; Woodhouse Scar in Skircoat, Salterhebble, Elland, Hebden Bridge, &c.

**Hieracium boreale**, Fr.—agg. 96. Hawkweed.

Native. British type. P. July—September.

1839. Mill House (Sowerby).—*J. Shepherd*; *Herb. S. K.*

Woods near Halifax, very common.—*Herb. Leyland.*

Very common on railway banks, waste ground, and in fields.

**Hypochoëris radicata**, L.—111. Cat's-ear.

Native. British type. P. June—October.

Very common in rough fields and banks throughout the parish. No definite record before 1887.

**Leontodon hispidus**, L.—92. Hawkbit.

Native. English type. P. July—September.

Near Broadbottom.—*Herb. Gibson.*

Common in banks and fields: Ogden, Warley, Luddenden, Rishworth, Hebden Bridge, &c,

**Leontodon autumnalis**, L.—110. Hawkbit.

Native. British type. P. July-September.

1867. Shibden.—*J. Walker*.

Very common, on waste ground, canal and river banks and in fields.

**Taraxacum officinale**, Web.—112. Dandelion.

Native. British type. P. February-November.

1775. In plenty in the spring, almost in every field about Halifax.—*J.B.*

Very common in meadows and waste places: the feature in some meadows towards the end of May.

Var. **palustre**, DC.—74.

Frequent in wet ground near the moors: Wadsworth, Erringden, Rishworth, Ogden, etc.

**[Lactuca saligna**, L.—9. “The least wild Lettuce.”

Unknown. P. Germanic type.

1775. In a lane going from Lower Willow Hall to Ashworth Clough in Skircoat; in Duel Lane and the Wet Lane near Cliffe Hill, both in Warley.—*J.B.*

In mistake for the following species. The true distribution of the two was unknown at the time and Bolton, relying on Hudson's statement that *L. saligna* was generally distributed, and *L. muralis* only found near Hornsey, concluded that the Halifax plant must be the former. Compare the case of *Cenanthe*, p. 48.]

**Lactuca muralis**, Fresen.—69. Wall Lettuce.

Native. English type. A or B. June-August.

Wet lanes, etc., near Halifax.—*Herb. Leyland*.

1841. About Luddenden, frequent.—*Herb. S. King*.

Frequent on old walls and shady rocks and banks: Elland Park Wood, Walter Clough, Salterhebble, Rishworth, Luddenden Dean, Cragg Vale, Crimsworth Dean, Colden Valley, Hippings Clough.

**Sonchus oleraceus**, L.—111. Sowthistle.

Native. British type. A. July-September.

1844. Luddenden.—*S.K.* 1867. Shibden Old Lane.—*J.W.*

Infrequent, in fields and waste ground: Elland, Salterhebble, Skircoat, Copley, Luddenden Foot.

**Sonchus asper**, Hoffm.—104. Sowthistle.

Native. British type. A. July-September.

Infrequent, in cultivated ground and waste places: Shaw Syke (1885), Salterhebble, Skircoat, Elland, Copley, Hippings Clough, &c.

**Sonchus arvensis**, L.—111. Sowthistle-

Colonist. British type. P. July-September.

Near Copley Mill.—*Herb. Leyland*.

Rarer than the preceding sowthistles, but in the same district: canal side, Salterhebble; waste ground, Elland.

**Tragopogon pratense**, L.—84. Goat's-beard.

Native. British type. B. June-July.

1775. At Woodhouse in Skircoat, in several fields about Shaw Hill near Halifax, and in some fields near Elland Hall.—*J. Bolton*.

Var. *major*.—In a field near Ripponden.—*Herb. Leyland*.

Infrequent in fields and banks: Hove Edge, Lightcliffe; Tag Lock, Elland; Copley. Only the var. *minus* noticed recently.

## CAMPANULACEÆ.

**Jasione montana**, L.—80. Sheep's-bit.

Native. British type. A or B. July-August.

Near Halifax, common.—*Herb. Leyland*.

1862. Beacon Hill, Halifax.—*J. Bates; Miall's Flora*.

1867. Scout Wood, Shibden, and plentiful on the railway banks.—*J. Walker*.

1888. Near Hardcastle Crag, *J. Willis*; Todmorden, *A. Stansfield*; Norland Moor, *H. F. Parsons*; *Lees' Flora*.

Not uncommon in upland pastures and banks: Bradshaw, Shibden, Salterhebble, Norland, Stainland, Luddenden Dean, Brearley, Crimsworth Dean, Hardcastle Crag, Walshaw, Hippings Clough, &c.

**Wahlenbergia hederacea**, Reich.—46. Ivy-leaved bell-flower.

Native. Atlantic type. P. July-September.

1775. Grows in good plenty by the edge of a rill of water on Barkisland Moor, on that side towards Ripponden.—*J.B.*

1832. Cob Clough, Ripponden.—*Herb. Leyland*.

1838-41. Top of Cob Clough, Ripponden.—*Herb. S. King*.



One of the rarest of West Yorkshire plants, found in sheltered cloughs in the S.W. of the county and still existing in its single station in the parish.

**Campanula latifolia**, L.—61. Bell-flower.

Native. Scottish type. P. July-August.

1834. Dobroyd Clough, Todmorden; Shibden Dale, Walker Clough, Riding Bridge and many other places near Halifax.—*Herb. Leyl.*

1841. Daisy Bank Wood, Warley.—*Herb. S.K.*

1862. Fixby.—*Hudd. Nat. Hist.*; *Miall's Flora.*

1867. Above the Bridge in Sim-carr Wood, Shibden; hedge banks near Cromwell Wood, Southowram.—*J.W.*

Now rare, owing to the depredations of children and others; but still in Shibden, Walter Clough, Hebden valley, and doubtless a few other sequestered wooded cloughs.

*Campanula rapunculoides*, L.—24.

Alien. P. July-August.

At Copley since 1894.

**Campanula rotundifolia**, L.—111. Harebell.

Native. British type. July-September.

1841. Wadsworth Banks.—*Herb. S.K.*

1867. Shibden, common.—*J.W.*

Very common in banks, waysides, and moorland pastures.

VACCINIACEÆ.

**Vaccinium Vitis-Idæa**, L.—67. Cowberry. Whortleberry.

Native. Highland type. Shrub. June-July.

1775. Mountainous places and on the north side of high hills, as on the north side of Norland, Sowerby and Soyland moors; in North Dean in Greetland, in several places about Katty's Well in Warley, and a few on the edge of Skircoat Moor.—*J.B.*

Near Halifax, very common.—*Herb. Leyl.*

1867. Ogden.—*J.W.*

Common on all the moors west of Halifax to Rishworth, Stansfield and Widdop. Gone from Skircoat, but still on Norland Moor.

**Vaccinium Myrtillus**, L.—101. Bilberry, Whinberry.

Native. British type. Shrub. April-June.

1775. Sowerby, Norland, Soyland, Rishworth, Warley and Skircoat Moors in plenty; in Shaw-edge Wood in Soyland, and Willow Hall Wood in Skircoat.—*J.B.*

1835. Woods about Luddenden.—*Herb. S.K.*

1867. Shibden, Shroggs Wood, Ovenden, Ogden.—*J.W.*

Very common on all the moors and in many of the woods and cloughs from Elland Park Wood westwards. Often the dominant feature, as on Widdop Moors, to the comparative exclusion of the heaths.

**Schollera Occycoccus**, Roth.—68. (*Vaccinium Oxycoccus*, L.)  
Cranberry.

Native. British type. Shrub. June-August.

1775. Wet places on the moors in Warley, Sowerby and Rishworth.—*J.B.*

Boggy moors near Halifax, frequent.—*Herb. Leyland.*

1836. Rough-head Hey, Erringden; 1847. Castle Carr.—*Herb. S.K.*

Frequent in bogs on all the moors west of Halifax, except perhaps Norland.

ERICACEÆ.

**Arctostaphylos Uva-ursi**, Spreng.—34. Bearberry.

Native. Highland type. Shrub. May-June.

1666. Four miles from Heptonstall, near Widdop, on a great Stone by the River Gorppe, in Lancashire.—*C. Merrett; Pinax.* The first record of this plant in Britain; Gorppe lies in the parish and in Yorkshire.

1805. At Heptonstall.—*Rev. W. Wood; Botanists' Guide.*

1835. Near Heptonstall.—*Herb. S. King.*

1838. Hutchin Moor, near Todmorden.—*Herb. Leyland.*

1840. It formerly grew in the Eavs at Heptonstall, but is now eradicated.—*Baines' Flora.*

It is doubtful if it still remains on the Gorppe Stones; a search for it there this year was unsuccessful.

**Andromeda Polifolia**, L.—29. Bog-bell.

Native. Intermediate type. Shrub. May-July.

1724. Blackstone Edge.—*Ray's Syn.*

1775. Warley, Sowerby, Rishworth and Soyland moors, and in some boggy places about half a mile below Fly brass-lath in Warley.—*J. Bolton.*

On the moor above Ogden Clough, Rishworth Moor, &c.—  
*Herb. Leyland.* 1847. Castle Carr.—*Herb. S.K.*

Heptonstall Moor.—*Herb. Gibson.*

1867. Ogden Moors.—*J.W.*

1888. Near Kebcote, &c., on Stansfield Moor, Todmorden,  
—*A. Stansfield; Lees' Flora.*

Infrequent, but probably not so rare as is usually supposed;  
certainly not “gone from its Halifax stations,” for it is  
still found on Ogden Moor.

**Calluna Erica**, D.C.—III. Ling. Heather.

Native. British type. Shrub. July-September.

1775. See *Erica cinerea*.

1841. Midgley Moor.—*Herb. S.K.*

Skircoat and Norland Moors, &c.—*Herb. Leyland.*

1867. Upper Shibden; plentiful on moors around Halifax.  
—*J.W.*

Very common on all the moors and moorland cloughs.  
Like the bilberry, it is found on the tops of our highest  
moors, and also descends into the cloughs and woods.

**Erica Tetralix**, L.—110. Cross-leaved Heath.

Native. British type. Shrub. July-September.

1867. Shibden, Ogden and Norland Moors, common.—*J.W.*

Very common on most of the moors, but either absent or  
rare on the highest moors, above 1250 feet.

**Erica cinerea**, L.—108. Heath.

Native. British type. Shrub. July-September.

1775. Warley, Sowerby and Rishworth moors; in North  
Dean, in Greetland, and in Woodhouse Scarr in Skircoat,  
and often on the moors with common heath or ling.—*J.B.*

Norland Moor.—*Herb. Leyland.* 1867. Shibden.—*J.W.*

Very common on many of the moors, though not so frequent  
as *E. Tetralix*, and like it absent on the highest moors.

**Pyrola media**, Sw.—42. Winter-green.

Native. Scottish type. P. July-August.

1666. At North Bridge, half-a-mile from Halifax, plenti-  
fully.—*C. Merrett; Pinax.*

1670. Near Halifax, by the way leading to Keighley.—  
*Ray; Cat.*

1690. On the moors south of Heptenstall in the way to Burnley, in great plenty for near a mile's riding. —*Ray*; *Syn.*  
 1775. Allen Wood in Norland; North Dean in Greetland, in a rough place near Birks Hall in Ovenden Wood, and in Hathershelf Scout in Sowerby.—*J. Bolton.*

These earlier records are under the name *P. rotundifolia*, from which *P. media* was not then separated.

1828. Ray's plant, found plentifully about Halifax, is *P. media*, of which I have received fine specimens from Mr. R. Leyland, of that town, who first detected the error.—*Sir J. E. Smith*; *English Flora.*

Rough Hey near Ripponden, North Dean Wood, &c; Stiperden Clough near Todmorden, &c.—*Herb. Leyland.*

1841. North Dean; Warley Moor.—*Herb. S.K.*

1877. Woods above Mytholm Church.—*A. Stansfield.*

1888. Horsebridge Clough, (Hebden Bridge).—*F. A. Lees.*

The numerous records point to the comparative rarity of this plant, which is only found in about three other places in West Yorkshire, but which has been relatively abundant and widely distributed in the upper Calder valley. There has been some confusion of this and *P. minor*, but as regards the North Dean station, not only Bolton's statement, but the herbarium specimens prove that both existed there, though only *P. minor* is now found. As to the other stations it is extinct at North Bridge and Birks Hall, which are both in the borough of Halifax, but may still remain at any of the others. It is known to be still in the Hebden valley and in Cragg Vale.

**Pyrola minor**, L.—68. Lesser Winter-green.

Native. Scottish type. P. June-July.

1775. A very scarce plant in this parish, only in North Dean, in Greetland, along with the common *Pyrola*.

1833. North Dean Wood, Greetland; Hood Hole in Hareley Wood, near Todmorden.—*Herb. Leyland.*

1841. North Dean.—*Jos. Tate*; *Herb. S.K.*

1864. Mytholm Clough, Hebden Bridge; 1867. North Dean Wood, not common.—*J. Walker.*

1888. Hudhole Wood, near Scout Hareley Wood, Todmorden; and above Lumb-bank, Mytholm.—*A. Stansfield*; *Lees' Flora.*

Still in North Dean Wood.

## PRIMULACEÆ.

**Primula acaulis**, L.—111. (*P. vulgaris*, Huds.) Primrose.

Native. British type. P. April-June.

1841. Common about Luddenden.—*Herb. S.K.*

Heptonstall Eaves.—*Herb. Gibs.* 1867. Shibden.—*J.W.*

Now infrequent and becoming rarer every year by removal to gardens. In fields, hedges and woods: Coley Beck, Shibden, Cromwell Wood, Ogden, Luddenden Dean, Crimsworth Dean, Hebden Valley, &c.

**Primula veris**, L—89. Cowslip.

Native. British type. P. May-June.

Rare in the neighbourhood of Halifax.—*Herb. Leyland.*

1867. In a meadow at Upper Shibden, not common.—*J.W.*

Now rare, perhaps never common: on Clover Hill, Halifax, as recently as 1885; Southowram, Cragg Vale, Erringden, Crimsworth Dean, &c.

**Lysimachia vulgaris**, L.—78. Yellow Loosestrife.

Native. English type. P. July-August.

Infrequent, only in the lower part of the main valley, by the waterside: Tag Lock, Copley, Norland, Luddenden Foot and Luddenden. First recorded 1887.

**Lysimachia Nummularia**, L.—70. Creeping Jenny.

Native? English type. P. June-July.

1775. In shady places along the margins of Warley Clough, on the Skircoat side.—*J. Bolton.*

1867. Luddenden Valley.—*J. Walker.*

Only known at present in Dean House Wood, Luddenden Dean, where it certainly may have been introduced.

**Lysimachia nemorum**, L.—109. Yellow Pimpernel.

Native. British type. May-August.

Woods near Halifax, very common.—*Herb. Leyland.*

1842. Frequent about Luddenden.—*Herb. S. King.*

Hirst Wood.—*Herb. Gibs.* 1867. Shibden.—*J.W.*

Common in moist woods, cloughs and pastures throughout the parish.

**Trientalis europæa**, L.—38. Chickweed Winter-green.

Native. Scottish type. P. June.

1775. On a moor in Bradshaw, about the pipe-clay pits, in mossy, wet places. This seems to be one of the scarcest plants in England.—*J.B.*

On the hill above Causey Foot near the Pottery.—*Herb. Leyland.*

1840. On the top of Swill Hill.—*Baines' Flora.*

1841-4. Swill Hill.—*Herb. S.K.*

1874. On a piece of bog land at the foot of Soil (or Swill) Hill, between Halifax and Howarth.—*R. Earnshaw, Lees' Flora.*

It still flourishes in several places, in this its most southerly station in the British Isles.

**Anagallis arvensis**, L.—99. Scarlet Pimpernel.

Colonist. British type. A. July-September.

1841. Mill House, Sowerby; Sowerby Bridge.—*Herb. S.K.*

1843. Sterne Mill.—*Herb. Gibson.*

Infrequent in gardens or cultivated ground: Halifax, &c.

*Anagallis cœrulea*, Sch.—48. Casual.

1832. Lumb Mill.—*Herb. Gibson.* 1895. Elland.

**Anagallis tenella**, L.—97. Bog Pimpernel.

Native. British type. P. July-August.

1775. A scarce plant here, only in Stainland Dean, near the sides of the footpath leading from Firth House to Stainland, in a boggy place.—*J. Bolton.*

1820. Stainland Dean.—*Herb. Leyland.*

Firth House Mill.—*Widdop Lord; Herb. S.K.*

1888. Hebden Bridge.—*A. Stansfield; Lees' Flora.*

#### OLEACEÆ.

**Fraxinus excelsior**, L.—109. Ash.

Native. British type. Tree. Late April-May.

1841. Common about Luddenden.—*Herb. S.K.*

1867. Shibden.—*J. Walker.*

Frequent in woods, but usually planted.

*Ligustrum vulgare*, L.—83. Privet.

Alien. English type. Shrub. June-July.

1867. Canal banks, planted for garden fences, but not indigenous.—*J. Walker.*



## APOCYNACEÆ

**Vinca minor**, L.—73. Periwinkle.

Denizen. English type. P. May-June.

1775. Scarce hereabouts, only in a little wood belonging to Willow Hall in Skircoat.—*J. Bolton*.

1839. Shroggs near Halifax; 1842. Mayroyd Wood, Hebden Bridge.—*Herb. S.K.*

Hebden Bridge.—*R. Leyland*.

1867. Wood near the old Spa House, Shibden, having escaped from the garden.—*J.W.*

Cromwell Wood, Elland.

## GENTIANEÆ.

**Erythræa Centaurium**, Pers.—102. Centaury, "Centuary"

Native. British type. A. July-September.

Dry pastures in Greetland, &c.—*Herb. Leyland*.

1838. Luddenden Dean.—*Herb. S.K.*

1845. Centuary grows near Southowram, in Park Nook, Salterhebble, Beverley, Brownhill, in the township of Stansfield.—*Med. Bot. Soc.*

1879. Hebden Valley.—*Y.N.U. Excurs*; *Lees' Flora*.

Rare, in dry upland pastures: Luddenden Dean, Broadbottom in Wadsworth, Crimsworth Dean, Erringden, Wickenhill, and various places near Hebden Bridge.

**Gentiana Amarella**, L.—81, Gentian, Felwort.

Native. British type. A or B. August-September.

1820. Fields in Wadsworth Lanes.—*Herb. Leyland*.

1840. Near Halifax.—*Baines' Flo.*

1862. Fields near Magson House, Warley.—*C. Eastwood. Miall's Flora.*

1888. Var. **uliginosa**, Willd. This flowers in May and early June. It has a 4-cleft corolla, occurs about Halifax (*F. A. Lees*), Ovenden (*R. Earnshaw*), in moist elevated pastures, . . . and evinces none of that partiality for calcareous soil which characterises the type.—*Lees' Flora*.

In rough moorland pastures in Mixenden, Luddenden Dean, Midgley, Wadsworth, Crimsworth Dean, Heptonstall, Cragg Vale, Ryburn Valley, &c. It does not flower in the spring but in the autumn. The corolla is 4-cleft, but

the calyx is very variable ; on the same plant the number of segments may be three, four and five, though mostly four. Whether it is the var. *uliginosa* is, as yet, undecided.

**Gentiana campestris**, L.—85. Field Gentian.

Native. British type. A or B (?) August-September.

1820. In the next field to the Owlter Bank, a little above Foster's Mill, near Hebden Bridge—*Herb. Leyland*.

1832. Norland.—*Herb. S.K.*

Hirst, Wadsworth.—*Herb. Gibson*.

1840. Near Hebden Bridge. Occasionally in old fields near Halifax—*Baines' Flora*.

1862. Fields near Magson House, Warley.—*C. Eastwood* ; *Miall's Flora*.

In similar places to the preceding, but rarer. Some forms of *G. Amarella*, with 4-cleft calyx, of which one pair of segments is distinctly larger than the other, though not over lapping, approach so closely to this that it is difficult to distinguish them.

**Menyanthes trifoliata**, L.—110. Bogbean, Buckbean.

Native. British type. P. June-July.

1845. Grows in Heptonstall Cabin, Reap's Cross, and in the township of Stansfield, Moss Hall Lane.—*Med. Bot. Soc.*

Rare, only known near Reaps Cross in Heptonstall.

POLEMONIACEÆ.

[*Polemonium cæruleum*, L.—5. Jacob's Ladder.

Alien. Intermediate type. P. June-July.

1775. Scarce in this parish; only in a lane leading from Skircoat Green to Halifax, a little before you come to the Moor.—*J. Bolton*.

1814. Near the end of the wooden bridge at Sterne Mill.—*Herb. Leyland*.

1867. In a bushy hilly place at Upper Shibden, very rare.—*J. Walker*.

These would be garden escapes.]

BORAGINEÆ.

**Cynoglossum officinale**, L.—76. Hound's-tongue.

Native. English type. B. June-July.

Skircoat Moor.—*Herb. Leyland*.

The only record, unless "*C. montanum*, in a lane leading to Cromwell Wood in Southowram."—*J. Walker*, is in mistake for this species. It might occur again fugitively.

*Asperugo procumbens*, L. Madwort. Alien. A. June-July.  
1893-4. On waste ground at Dapper Mill, Wheatley.

**Symphytum officinale**, L.—86. Comfrey.

Denizen. English type. P. May-July.

Infrequent, and generally near cottages: Salterhebble, Sowerby Bridge, Rishworth, &c; no record before 1893.

*Borago officinalis*, L. Borage. Alien. A or B. June-July.  
1894-6. In a cornfield at Copley.

*Anchusa sempervirens*, L. Alkanet.

Alien. English type. P. May-July.

1830. Illingworth; 1842. Dodgeon Clough, Ovenden.—*Herb. S.K.*

1835. Hebden Bridge.—*R. B. Bowman*, sp. from *S. Gibson*, *N.B.G.*

1836. In a field near Farrar Mill.—*Herb. Leyland.*

1840. In several situations near Halifax, but not truly wild.—*Baines' Flora.*

1845. Near Heath School, Skircoat, and Rattenstall Wood, near Hebden Bridge.—*Med. Bot. Soc.*

1888. Ogden and Warley valleys.—*R. Earnshaw; Lees' Flora.*

Infrequent, and near gardens or cottages: Elland Park Wood since 1887, Barkisland, Hebden Bridge, &c.

**Lycopsis arvensis**, L.—105. Bugloss.

Colonist. British type. A. June-July.

1825. Sterne Mill.—*Herb. Gibson.*

1832. A weed in Lane House garden, Luddenden.—*Herb. S.K.*

Rare, and hardly more than a casual: on waste ground at Elland (1895).

**Myosotis cespitosa**, Schultz —107. Forget-me-not.

Native. British type. P. June-August.

Near Skircoat Moor.—*Herb. Leyland.*

1843. Brass Bank.—*Herb. Gibson.*

Common in ditches and boggy places in the cloughs: Ogden, Hebden Bridge, Stansfield, &c.

**Myosotis palustris**, Relh.—104. Forget-me-not.

Native. British type. P. June-August.

1834. Widdop and Gorple.—*Herb. Gibson*.

1840. Luddenden.—*Herb. S. King*.

1867. Upper Shibden and Ogden.—*J. Walker*.

Common in streamsides and marshy ground: Ogden, Luddenden, Fixby, Rishworth, Cragg Vale, Hebden Bridge, &c.

**Myosotis repens**, Don—92. Forget-me-not.

Native. British type. P. June-August.

1843. Wood Hey, Hebden Bridge.—*Herb. Gibson*

Common at higher levels in bogs and marshy ground: Ogden, Cragg Vale, Hebden Bridge, Widdop, Gorple, &c.

**Myosotis sylvatica**, Hoffm.—45. Wood Forget-me-not.

Native. English type. P. May-July.

1837. Beestones near Stainland; Shibden.—*Herb. Leyland*.  
Near Bottom Bridge.—*Herb. Gibson*.

1867. Simm Carr Wood, Shibden, common.—*J.W.*

1888. Hebden Bridge and Fixby.—*Lees' Flora*.

Infrequent, in woods: Elland Park Wood, Sun Wood, Hardcastle Crag, &c.

**Myosotis arvensis**, Lam.—112.

Native. British type. A. June-August.

1828. Lumb Bank; 1843. Hanging Royd Mill.—*Herb. Gibson*. 1841. Lane House, Luddenden.—*Herb. S.K.*

Frequent on banks: Hipperholme, Wheatley, Elland, Rishworth, Eastwood, &c.

**Myosotis collina**, Hoffm.—92.

Native. British type. A. May-July.

1843. Between Brighthouse and Sowerby Bridge.—*S. Gibson; Phytologist*.

**Myosotis versicolor**, Reichb.—108.

Native. British type. A. May-July.

1844. The Hollins, Warley.—*Herb. S.K. and Gibson*.

Infrequent in banks and fields: Norland, Crimsworth Dean.

**Lithospermum officinale**, L.—77. Gromwell.

Casual. British type. P. June-July.

Occasionally found on waste ground at Elland, &c., with other casuals.

**Lithospermum arvense**, L.—86.

Colonist. British type. A. June-July.

1832. Near Woodhouse, Skircoat; 1844. Luddenden and the Hollins, Warley.—*Herb. S. King.*

1896. Birdcage, Skircoat.

**Echium vulgare**, L.—92. Vipers Bugloss.

Casual. British type. B. July-August.

1775. About Highroad Well and Waterhill, both in Warley.—*J. Bolton.*

In a field near Norland Moor.—*Herb. Leyland.*

Frequent on waste ground, but not more than an introduced casual: Elland, Sterne Mill, Hebden Bridge, &c.

## CONVOLVULACEÆ

**Volvulus sepium**, Junger.—94. (*Convolvulus sepium*, L).  
Great Bindweed, *Convolvulus*.

Native. English type. P. July-August.

1775. Plentifully about the hedges near the river Calder, and in the great holme below Woodhouse Mill, and in a hedge near Copley Mill, towards Salterhebble.—*J.B.*

Near Brighouse.—*Herb. Leyland.*

1867. Salterhebble, very plentiful.—*J. Walker.*

Infrequent and confined, as shown by former records, to the lower part of the Calder Valley.

**Convolvulus arvensis**, L.—96. Field Bindweed.

Native. English type. P. July-August.

1775. Frequently amongst corn, about Lightcliffe, Brighouse and Rastrick.—*J. Bolton.*

Southowram, Brighouse, &c.—*Herb. Leyland.*

1867. Cornfield at Hipperholme.—*J. Walker.*

Common on waste ground, railway banks, &c.: in the main valley from Eastwood to Brighouse, Wyke and Hipperholme.

## SOLANACEÆ.

**Solanum Dulcamara**, L.—97. Bittersweet.

Native. British type. P. June-August.

1775. Not common here. In a hedge at the bottom of a bank at Bolton Brow; in a rough place on the side of a lane leading from Willow Hall to Broadgates in Skircoat.—*J.B.* Near Elland, &c.—*Herb. Leyland.*

Infrequent, with a low range and restricted area, in woods and hedges: Tag Lock, Elland Park Wood, Copley, and Hebden Bridge.

*Solanum nigrum*. L.—64.

Casual. English type. A. July-August.

1893. On wool refuse, Dapper Mill, Wheatley.

*Hyoscyamus niger*, L.—79. Henbane.

Casual. English type. A or B. June-August.

1775. Only on Gibbet Hill, above Halifax.—*J.B.*

1890-94. On waste ground, Dapper Mill, Wheatley; 1897. Elland.

#### SCROPHULARINEÆ.

***Verbascum Thapsus***, L.—91. Mullein.

Native, or Denizen. English type. B. July-September.

Infrequent, on railway banks and waste ground: Copley, Luddenden, Wheatley. No earlier records.

[***Verbascum Lychnitis***, L.—12. Hoary Mullein.

Extinct Native or Alien. English type. B. July-Aug.

1775. In dry pastures, the year after they have been fallow. In several fields about Lower Willow Hall, Skircoat, about the slate pits on Elland Edge, and in several fields about Illingworth.—*J.B.*

“Held by Mr. Watson to be very much of an Alien throughout Britain, its native stations—stony hills—in the Belgian coal-field are very similar to those about Halifax, indicated above . . . To be erratic in their appearances and disappearances is, however, somewhat a characteristic of all the Mulleins in indigenous areas, with always a tendency towards springing up most plentifully in soil newly turned, or thrown up from a depth.”  
—*Lees' Flora.*]

[***Verbascum Blattaria***, L.—?

Extinct Alien. English type. A. June-October.

1764. Several in a tenter-field, belonging to one Joshua Horn, of Ovenden Wood, but not met with in any other place.—*J.B.*]

***Linaria Cymbalaria***, Mill. Mother-o'-thousands.

Alien. P. May-September.

1867. Luddenden valley; on an old wall near Shaw Hill, Halifax.—*J. Walker.*



1888. Salterhebble.—*G. Roberts*; *Lees' Flora*.

Infrequent, on old walls, where it is often well established :  
Hunger Hill (near Shaw Hill), Salterhebble, Elland,  
West Vale, Gatehead in Greetland.

***Linaria vulgaris***, Mill.—99. Yellow Toad Flax.

Native. British type. P. July-September.

1775. In several fields about Halifax; in fields about  
Skircoat Moor; in fields about Elland Hall.—*J.B.*

1839. Canal banks near Copley Mill.—*Herb. S.K.*

1867. Common on railway banks.—*J. Walker*.

Infrequent, in banks and hedges in the main valley : Copley,  
Salterhebble, Elland Park Wood, Tag Lock, Hipperholme.

***Scrophularia nodosa***, L.—109. Figwort.

Native. British type. P. June-September.

1775. In Willow Hall Wood in Skircoat, Steps Wood in  
Warley, and several fields near Hebden Bridge.—*J.B.*

1832-42. Frequent about Luddenden.—*Herb. S.K.*

1867. Shibden and Wheatley.—*J. Walker*.

Common by ditch and stream sides, though not very  
abundant.

***Scrophularia aquatica***, L.—72. Figwort.

Native. English type. P. June-September.

Rarer, and in damper situations than the preceding : Rish-  
worth, Cragg Vale (var. *Balbisii*).

[*Mimulus luteus*, L. Monkey-flower.

Extinct Alien. P. July-August.

1867. A mile and a half below Ogden, in the Wheatley  
valley, naturalised.—*J. Walker*.]

***Digitalis purpurea***, L.—107. Foxglove.

Native. British type. B. June-September.

1775. In Steps Wood in Warley, Woodhouse Wood, and  
Willow Hall Wood in Skircoat, and in most of the lanes  
about Halifax.—*J.B.*

In a clough in Greetland.—*Herb. Leyland*.

1840. Common about Luddenden.—*Herb. S.K.*

1867. Shibden.—*J.W.*

Very common in woods, banks, and rough waste places  
throughout the parish,

**Veronica hederæfolia**, L.—100.

Native. British type. A. May-August.  
 Wood Mill, Hebden Bridge.—*Herb. Gibson*.  
 Infrequent, in cultivated and waste ground: Lightcliffe,  
 Hipperholme, Copley, &c.

**Veronica polita**, Fr.—89. Garden Speedwell.

Native. British type. A. May-September.  
 1832. Hanging Royd Mill, Hebden Bridge.—*Herb. Gibson*.  
 1833. Broadbottom, Wadsworth.—*Herb. Leyland*.  
 Rare, on dry walls, &c.: Copley.

**Veronica agrestis**, L.—110.

Native. British type. A. May-September.  
 Common in cultivated ground, as market gardens at Copley,  
 Salterhebble, Rishworth, &c.

**Veronica Tournefortii**, Gmel.—90. (*V. Buxbaumii*, Ten.)

Colonist. British type. A. May-September.  
 Rare, in field corners: Copley, Skircoat (1897).

**Veronica arvensis**, L.—111.

Native. British type. A. May-August.  
 1841. Skircoat.—*Herb. S. King*.  
 Infrequent, on walls, waste ground and banks: Lightcliffe,  
 Ogden, &c.

**Veronica serpyllifolia**, L.—112.

Native. British type. P. May-July.  
 1867. Cornfield near Salterhebble.—*J. Walker*.  
 Common, in banks and cultivated ground: Wheatley,  
 Ogden, Barkisland, Rishworth, Hebden Bridge, &c.

Var. **humifusa**, Dickson.—17.

1890. Cragg Vale.

**Veronica officinalis**, L.—111. Speedwell.

Native. British type. P. June-July.  
 1775. On dry hills about Halifax, Skircoat, Warley, and  
 along the roadsides between Broadgates and Washer  
 Lane, in Skircoat; also on the edge of Skircoat Moor.  
 —*J.B.* 1867. Shibden.—*J.W.*  
 Common in woods, rough moorland pastures, &c.

**Veronica Chamædrys**, L.—111. Bird's Eye.

Native. British type. P. May-July.

1775. In the tenter-field at Lower Willow Hall, and the tenter-croft at Pyes-nest, both in Skircoat.—*J.B.*

1844. Luddenden Brook.—*Herb. S.K.*

Hirst Wood.—*Herb. Gibson.* 1867. Shibden.—*J.W.*

Common in banks and hedges.

**Veronica montana**, L.—89.

Native. British type. P. May-July.

1834. Binn Royd Clough; very common in many other places.—*Herb. Leyland.* 1841. Luddenden.—*Herb. S.K.*

1843. Hirst Wood.—*Herb. Gibson.*

Common in woods and cloughs: Elland Park Wood, Norland, Stainland, Luddenden Dean, Cragg Vale, Hardcastle Craggs, Colden Clough, Hippings Clough, &c.

**Veronica scutellata**, L.—107.

Native. British type. P. July-August.

1832. In a ditch on the edge of Barkisland Moor, a little above where *Campanula hederacea* grows.—*Herb. Leyland.*

1877. Stream below Gorple water, rare.—*A. Stansfield; Lees' Flora.* Not found recently.

**Veronica Beccabunga**, L.—112. Brooklime.

Native. British type. P. June-August.

1775. In several places in Warley Clough, and about Broadgate in Skircoat.—*J. Bolton*

1839. Old House Mill, Sowerby.—*Herb. S.K.*

1867. Upper Shibden.—*J. Walker.*

Infrequent, in streams and marshy ground: Sun Wood, Hipperholme, Shibden, Wheatley, Ogden, Hebden Bridge.

**Euphrasia officinalis**, L.—112. Eyebright.

Native. British type. A. June-October.

1775. In most lanes about Halifax, Elland, Brighouse, and Rastrick.—*J. Bolton.*

1845. Eyebright grows upon the hillside above the Chequer Inn, Southowram, and in the neighbourhood of Scout Wood and mostly upon poor ground.—*Med. Bot. Soc.*

1867. Shibden, Copley, Ogden.—*J. Walker.*

Common in dry hilly pastures, on the edge of the moors.

**Bartsia Odontites**, Huds.—111.

Native. British type. A. July-August.

1835. Kershaw House Farm, near Luddenden; 1841, Midgley road-side.—*Herb. S.K.*

Near Brighthouse.—*Herb. Leyland.*

Rare, only found recently near Elland Park Wood.

**Pedicularis palustris**, L.—110. Lousewort.

Native. British type. A. June-August.

1844. In a bog near Denholme, seven miles north of Halifax.—*Herb S.K.* (This would be outside the parish.)

1867. Ogden.—*J. Walker.*

Rare, no recent record.

**Pedicularis sylvatica**, L.—112. Lousewort.

Native. British type. P. May-July.

1841. Common about Luddenden.—*Herb. S. King.*

1867. Shibden and Ogden.—*J. Walker.*

Very common in wet moorland pastures.

**Rhinanthus Crista-galli**, L.—112. Yellow Rattle,

Native. British type. A. June-July.

1867. Shibden.—*J. Walker.*

Frequent, in meadows and pastures: Lightcliffe, Wheatley, Barkisland, Rishworth, Cragg Vale, Hebden Bridge, Stansfield, &c.

**Melampyrum pratense**, L.—107. Cow-wheat.

Native. British type. A. June-August.

1864. Mytholm Clough, Hebden Bridge.—*J.W.* (though under the name *M. sylvaticum*).

1888. Hebden Bridge Valley; Halifax.—*Lees' Flora.*

Mainly, or exclusively var. *montanum*, Johnst. Frequent in woods and heathy banks, rarer on moors: Sun Wood, Luddenden, Stainland, Rishworth, Hollock Lea, Crimsworth Dean, Hardcastle Craggs, Gorple stream, Hippings Clough: quite rare in the eastern part of the parish.

## OROBANCHACEÆ.

**Orobanche major**, L.—61. Broomrape.

Native, extinct. English type. P. June-July.

1775. In several fields about Elland Park, in some rough fields at Binn's Hall, near Mixenden, and also in several fields about Rastrick.—*J. Bolton.*

1836. Binns bottom near Elland.—*Herb. Gibson.*

Binns bottom in Southowram.—*Herb. Leyland.*

1840. It formerly grew in a piece of rough ground called the Binns, in Southowram, near Halifax, but is now eradicated.—*Baines' Flora.*]

**Lathræa squamaria**, L.—62. Toothwort.

Native. English type. P. April-June.

1724. Prope Heptonstall.—*R. Richardson; Ray, Syn. iii., 288.*

Small-bees Wood, near Ripponden; Toadholes, near Triangle; Mayroyd Wood, near Hebden Bridge; and in Causey Mill Clough, near Todmorden.—*Herb. Leyland.*  
Mayroyd.—*Herb. Gibson.*

1830. Hive House Clough, Luddenden.—*Herb. S.K.*

1840. In Illingworth Clough; Hollins Wood in Warley; Still Wood near the Triangle Inn, Sowerby; and in Small Lees Wood, Ripponden; all near Halifax. At Mayroyd, near Hebden Bridge.—*Baines' Flora.*

1879. Hebden Valley.—*F. A. Lees.*

Rare, under trees: Clifton Beck, Hollins Wood, Cragg Vale, Hebden Bridge, Stansfield.

LENTIBULARINEÆ.

**Pinguicula vulgaris**, L,—93. Butterwort.

Native. Scottish type. P. June-July.

1775. A scarce plant in these parts. In a marshy field by the side of a ditch in Blackwood, within Sowerby, and by the side of another ditch in a boggy place on Norland Moor.—*J. Bolton.*

Norland Moor, Ogden, &c.—*Herb. Leyland.*

1862. Luddenden.—*C. Eastwood; Miall's Flora.*

Rare: Ogden, Luddenden, Crimsworth Dean.

LABIATÆ.

[*Mentha rotundifolia*, Huds.—52.

Extinct Casual. English type. P. August-September.

1840. From a plant found in Luddenden Brook.—*Herb. S.K.*]

*Mentha longifolia*, Huds.—59. (*M. sylvestris*, L.) Horse-mint.

Alien. English type. P. August-September.

1867. Banks of the stream below Hazlehurst Wood, Shibden.—*J.W.*

This more probably refers to *M. hirsuta*, which is not in J. Walker's list. The only recent record for *M. longifolia* is for Copley in 1895, where it was probably an escape from cultivation.

*Mentha vividis*, L. Spearmint.

Alien. English type. P. August-September.  
1887. Calder banks, Copley.

***Mentha piperita***, L.—68. Peppermint.

Denizen. English type. P. August-September.  
1775. In wet places in Warley Clough, from Wormald's House to the grounds below Shear Mill.—*J.B.*  
Near Warley.—*Herb. Gibson.*  
1841. Smith Clough, Luddenden.—*Herb. S.K.*

***Mentha hirsuta***, Huds.—111. (*M. aquatica*, L.) Water-mint.

Native. British type. P. August-September.  
1775. In several fields about Woodhouse, in Skircoat; in several ditches about Halifax and Elland.—*J.B.*  
On the roadside near Longbottom.—*Herb. Gibson.*  
1840. Hive House Clough, Luddenden.—*Herb. S.K.*  
Infrequent, in ditch-sides: Salterhebble, Copley, Lightcliffe.

***Mentha sativa***, L.—82. Mint.

Native. English type. P. July-September.  
Infrequent, in ditch-sides: Copley, Wheatley. No record before 1888.

***Mentha arvensis***, L.—105. Corn-mint.

Native. British type. P. July-September.  
1833. Hollock Lea, near Mytholmroyd.—*Herb. Gibson.*  
1867. In a cornfield at Salterhebble.—*J.W.*  
Occasionally in cornfields and waste ground: Salterhebble.  
Var. ***agrestis***, Sole.  
Near Midgley.—*Herb. Gibson.*

***Lycopus europæus***, L.—95. Gipsywort.

Native. British type. P. July-September.  
Elland.—*Herb. Leyland.*  
In the summit of the Rochdale canal.—*Herb. Gibson.*  
1841. Canal bank, Salterhebble.—*Herb. S. King.*  
1867. Banks of the canal near Salterhebble.—*J. Walker.*  
Abundant on, but confined to the canal banks.



[**Origanum vulgare**, L.—90. Wild Marjoram.

Unknown. British type. P. July-September.

1775. In several fields about Upper and Lower Willow Halls ; several fields about Exley.—*J. Bolton*.

It may have been native, but like the following it is much more abundant on limestone, and may have succumbed here to its unfavourable conditions. There is no other record of it, though specimens in Gibson's herbarium *may* be local ones.]

**Thymus Serpyllum**, Fr.—112. Wild Thyme.

Native. British type. P. June-August.

1775. In plenty upon the lower edge of Midgley Moor, on that side towards the town of Midgley ; also upon Illingworth Moor and Lindley Moor.—*J. Bolton*.

Wadsworth Lanes near Midgley.—*Herb. Leyland*.

1841. In the roadside from Midgley to Wadsworth.—*Herb. S.K.*

Rare, but still in Midgley and Wadsworth.

[*Calamintha arvensis*, Lam.—74.

Extinct Casual. British type. A. July.

1844. Lane House damstones, Luddenden ; a single plant.—*Herb. S.K.*]

[*Calamintha officinalis*, Moench.—62.

Extinct Casual. English type. P. July-August.

1775. A very scarce plant here, only upon Clifton Common, near Kirklees.—*J. Bolton*.

The station is outside the parish, and the plant was probably only a casual.]

*Salvia Verbenaca*, L.—64. Clary.

Casual. English type. P. July-September.

Found, since 1892, in several places about Elland.

[**Nepeta Cataria**, L.—58. Cat-Mint.

Denizen, extinct. English type. P. July-September.

1775. In a croft near High Royd, in Warley ; in several hedges about Ovenden, near Halifax ; near Hebden Bridge in several places.—*J. Bolton*.

Not likely to be a native, probably an escape from cultivation.]

**Nepeta Glechoma**, Benth.—103. Ground Ivy.

Native. British type. P. April-June.

Mayroyd Wood, Hebden Bridge.—*Herb. Gibson*.

1845. Near Dumb Mill and near Salterhebble; Common Wood.—*Med. Bot. Soc.*

1867. Near the Paddock, Shibden; at the bottom of Cromwell Wood, Southowram; near Hipperholme —*J.W.*

Infrequent, in hedge-banks, woods, &c.: Elland, Lightcliffe, Hipperholme, Illingworth, Copley, Hebden Bridge, &c.

**Scutellaria galericulata**, L.—103. Skull-cap.

Native. British type. P. June-September.

1775. On wet, marshy places, though sparingly in this parish. A marshy place on Lindley Moor and nowhere else near Halifax.—*J. B. Elland*.—*Herb. Leyland*.

183—. Canal bank, near Elland.—*Herb. S.K.*

1888. Todmorden.—*A. Stansfield; Lees' Flora*.

Common on the canal banks from Brighouse to Salterhebble: mill dam, Luddenden Foot; Hebden Bridge.

**Scutellaria minor**, Huds.—72.

Native. English type. P. July-August.

1775. A few plants grow here and there in the same place with the foregoing.—*J. Bolton*.

1834. Erringden Moor, near Hollock Lea.—*Herb. Leyland*.

From Black Burn (Stainland).—*Herb. Gibson*.

1840, Langfield Moor, near Todmorden.—*Baines' Flora*.

1888. Hebden Valley.—*Y.N.U. Exc.; Lees' Flora*.

Rare, in rough ground on the edge of the moors: in Broadhead Clough, near Hollock Lea, Erringden.

**Prunella vulgaris**, L.—112. Self-heal.

Native. British type. P. June-August.

1775. In several fields about Heath, near Halifax; in plenty in fields about Ripponden.—*J. Bolton*.

1867. Shibden.—*J. Walker*.

Very common in pastures.

**Stachys Betonica**, Benth.—82. Wood Betony.

Native; English type. P. June-August.

1775. In Hollings Wood, in Warley; Woodhouse Wood and field adjacent, in Skircoat; and in Snakehill Wood, near Halifax.—*J.B.*

Near Sterne Mill, Skircoat.—*Herb. Leyland.*

1845. Betony grows in Common Wood, near Hipperholme, and upper end of Shibden.—*Med. Bot. Soc.*

1867. Upper Shibden.—*J. Walker.*

Infrequent, in woods and pastures: Lightcliffe, Hipperholme, Shibden, Wheatley, Fixby; hardly known in the western part.

**Stachys palustris**, L.—111. Marsh Woundwort.

Native. British type. P. July-August.

1834. Copley Holms.—*Herb. Leyland.*

1867. Banks of the canal near Salterhebble.—*J.W.*

Common in ditches, canal banks, etc. in the lower part of the main valley from Rastrick to Sowerby Bridge; Hipperholme; Hebden Bridge.

× **sylvatica** (**ambigua**, Sm.)

1833. Colden Clough, near Lumb Mill.—*Herb. Gibs.*

1840. Near Sowerby Bridge.—*Herb. S.K.*

Occasionally met with: Norwood Green, Midgley.

**Stachys sylvatica**, L. 112. Hedge Woundwort.

Native. British type. P. June-October.

1844. Luddenden.—*S. King.*

1867. Common in Shibden.—*J.W.*

Very common in hedges and woods.

**Stachys arvensis**, L.—99.

Native. British type. A. July-August.

1775. *Glechoma arvensis*. In several places about Warley Clough on the Skircoat side, and not anywhere else to my knowledge in this parish.—*J.B.*

1841. Bottoms, Sowerby Bridge.—*Widdup Lord, Herb.S.K.*

Broadbottom near Mytholmroyd; Woodside.—*Herb. Leyl.*

Rare, in cultivated and waste ground: Haley Hill, Halifax; Elland.

**Galeopsis angustifolia**, Ehrh.—? Red Hemp Nettle.

Colonist. English type. A. July-August.

1856. Among onions in Lane House garden.—*Herb. S.K.*

1867. Shibden.—*J.W.*

Both records are under the aggregate name *G. Ladanum*, but King's spcm. is the sub-species *angustifolia*.

[**Galeopsis ochroleuca**, Lam.—8 (*G. dubia*, Leers).

Extinct Colonist. Local type. A. July-August.

1775. *Betonica hirta*, Yellow Betony. In cultivated fields about Fixby, near Rastrick.—*J. Bolton*.

1820. In the edge of a field on Beacon Hill, above Halifax. Now extinct, 1837.—*Herb. Leyland*.

1840. Formerly grew on Beacon Hill, near Halifax; but has long since disappeared.—*Baines' Flora*.]

**Galeopsis versicolor**, Curt —80. Hemp-nettle.

Colonist. British type. A. July-September.

1839. Near Luddenden.—*Herb. S.K.*

Rare, in waste or cultivated ground: Skircoat, Copley.

**Galeopsis Tetrahit**, L.—112. Hemp-nettle.

Colonist. British type. A. July-August.

1775. In plenty in the fields about Gibbet Lane, amongst the corn.—*J. Bolton*.

1844. Luddenden Brook.—*S. King*. 1867. Shibden.—*J.W.*

Infrequent, in cornfields and waste ground: mainly about Woodhouse and Copley; Illingworth and Rishworth.

Var. **bifida**, Bœnn.

Sterne Mill; Elland, &c.

**Lamium amplexicaule**, L.—96. Henbit.

Native. British type. A. June-August.

1837. A weed in Joseph Tate's garden at Skircoat Green.—*Herb. Leyland*. 1840. Near Halifax.—*Herb. S.K.*

Rare, in cultivated ground: Copley; Salterhebble.

**Lamium hybridum**, Vill.—76.

Native. British type. A. May-August.

1837. A weed in Joseph Tate's garden below Skircoat Green, and occasionally in other gardens near Halifax.—*Herb. Leyland*. 1840. Near Halifax.—*Baines' Flora*.

**Lamium purpureum**, L.—112. Red Deadnettle, or Archangel.

Native. British type. A. April-September.

1845. Archangel grows in Elland Wood Bottom and canal side, both Red and White.—*Med. Bot. Soc.*

1867. Shibden.—*J. Walker*.

Common, though not abundant ; in gardens, waste ground, roadsides, &c., at low levels : Lightcliffe, Shibden, Elland, Salterhebble, Copley, Luddenden, Hebden Bridge.

**Lamium album**, L.—101. White Deadnettle, or Archangel.

Native. British type. P. May-September.

Salterhebble.—*Herb. Leyland.*

1841. Canal bank, &c., near Elland.—*Herb. S.K.*

1845 With *L. purpureum*.—*Med. Bot. Soc.*

Common, though not abundant ; chiefly in the main valley from Brighouse to Sowerby Bridge, *i.e.*, at low levels ; also Hebden Bridge.

**Lamium Galeobdolon**, Crantz.—66. Yellow Archangel.

Native. English type. P. May-June.

Woods near Halifax, frequent.—*Herb. Leyland.*

Mayroyd Wood, Hebden Bridge.—*Herb. Gibson.*

1841. Common about Luddenden.—*Herb. S. King.*

1867. North Dean Wood, very plentiful.—*J. Walker.*

Common in damp woods, though not throughout the parish ; Clifton Beck, Elland Park Wood, Walter Clough, Sun Wood, Coley Beck, Norland Clough, Gatehead Clough in Greetland, Warley Clough, Crow-nest Wood and Hill-house Wood, near Hebden Bridge.

**Teucrium Scorodonia**, L.—110. Wood Sage.

Native. British type. P. July-September.

1775. In a lane between Willow Hall and Bairstow, and in plenty in several lanes near Halifax.—*J. Bolton.*

1840. Common about Luddenden.—*Herb. S.K.*

1867. Shibden.—*J.W.*

Common in rough banks, in dry woods and heathy ground.

**Ajuga reptans**, L.—109. Bugle.

Native. British type. P. May-July.

1775. In a field near Upper Willow Hall, in Skircoat ; in several fields adjoining to Allen's Wood, in Norland ; in a field, in plenty, at the bottom of Beacon Hill, near Halifax.—*J.B.* 1867. Shibden.—*J.W.*

Very common in damp pastures.

#### PLANTAGINEÆ

**Plantago major**, L.—112. Plantain, "Way-bread."

Native. British type. P. June-September.

1844. Luddenden.—*S. King*. 1867. Shibden.—*J. Walker*.  
Common in pastures and waste ground.

***Plantago lanceolata***, L.—112. Ribwort Plantain.

Native. British type. P. May-August.

1844. Luddenden.—*S. King*. 1867. Shibden.—*J. W.*  
Very common in pastures and waste ground.

*Plantago Coronopus*, L.—96. Buck's-horn Plantain.

Casual. British type. A. July-August.

1890. Elland, on waste ground.

#### ILLECEBRACEÆ.

*Herniaria glabra*, L.—4. Rupture-wort.

Casual. A. July-August.

1890. Wheatley, on mill refuse.

#### CHENOPODIACEÆ.

*Chenopodium polyspermum*, L.—49.

Casual. English type. A. July-September.

1893. Sterne Mill.

***Chenopodium album***, L.—111. Goosefoot. "Fat Hen."  
"Mixerweed."

Native. British type. A. July-September.

1840. Norland; 1841, Luddenden.—*Herb. S. King*.

1867. Shibden, Wheatley and Ogden.—*J. Walker*.

Common on waste ground.

Var. **viride**, Syme.

1890. Wheatley, on mill refuse.

***Chenopodium rubrum***, L.—64. Red Goosefoot.

Colonist. English type. A. July-September.

Infrequent, on waste ground: Wheatley.

***Chenopodium Bonus-Henricus***, L.—100. Good King Henry.  
Fat Hen.

Denizen. British type. P. May-August.

Near Halifax, common.—*Herb. Leyland*.

1839. Lane House, Midgley.—*Herb. S. King*.

1861. Skircoat.—*J. Bates; Miall's Flora*.

Frequent, on roadsides and rough ground near houses:  
King Cross, Woodhouse Scar, Skircoat; Salterhebble,  
Holmfield, Shibden, &c.



*Beta maritima*, L.—37. Beet.

Casual. English type. P. July-September.

1895. On waste ground at Elland.

**Atriplex patula**, L.—92 ?

Native. British type. A. July-September.

1844. Luddenden.—*S. King*.

Common in cultivated and waste ground.

Var. **erecta**, Huds. Colonist.

Infrequent, in cultivated ground.

Var. **angustifolia**, Sm.

1844. Luddenden.—*S. King*.

Common on waste ground: Salterhebble,  
Luddenden.

#### POLYGONACEÆ.

**Polygonum Convolvulus**, L.—111. Black Bindweed.

Colonist. British type. A. July-August.

1844. Luddenden.—*S. King*. 1867. Shibden.—*J. Walker*.

Infrequent, usually about corn-mills, or on waste ground:  
Sterne Mill, Elland, Luddenden, Hebden Bridge, &c.

Var. *subalatum*, V. Hall. (*pseudo-dumetorum*, Wats.)

Fixby.—*G. L. Lister*; See *Lees' Flora*.

**Polygonum aviculare**, L.—111. Knotgrass.

Native. British type. A. July-October.

1844. Luddenden.—*S.K.* 1867. Common in Shibden.—*J.W.*

Common on waste ground, banks, &c.

**Polygonum Hydropiper**, L.—105. Water Pepper.

Native. British type. A. July-September.

1840. In ditches, &c., frequent.—*Herb S. King*.

Infrequent, in ditches and wet places: Fixby, Elland,  
Greetland, Norland, Rishworth, Hebden Bridge.

**Polygonum Persicaria**, L.—112. Knotgrass.

Native. British type. A. July-September.

1844. Luddenden.—*S.K.*

1867. Shibden, common.—*J.W.*

Common in waste and cultivated ground, waysides, &c.

**Polygonum lapathifolium**, L.—103.

Native. British type. A. July-September.

1843. Near Sowerby Bridge.—*Herb. Gibson*.

1844. Luddenden.—S.K. 1862. Brighthouse.—*Miall's Flo.*  
 Infrequent, on waste ground, &c.: Skircoat, Sterne Mill,  
 Luddenden, Rishworth.

**Polygonum amphibium**, L.—108.

Native. British type. P. July-September.

Rare, only reported since 1894, from Tag Lock, near  
 Elland, where both it and the var. *terrestre*, Leers, occur  
 in the disused branch of the canal.

**Polygonum Bistorta**, L.—74. Bistort, Sweet Dock, Passion  
 Dock, Snake Weed. [August-September.

Native or Denizen. British type. P. May-June,  
 1763. Halifax.—*T. Martyn*; *Plantæ Cantab.*

1775. Moist places in meadows in various parts.—*J.B.*

1842. In meadows about Luddenden, abundantly.—*Herb.*  
*S.K.* 1862. Lightcliffe; Ovenden.—*J. Bates*; *Miall's Flo.*

1867. Shibden, abundant.—*J. Walker.*

Very common and abundant in damp pastures and meadows,  
 and by the stream sides in the cloughs, throughout the  
 parish. It has every appearance of a native plant.  
 Flowering most freely in June, it puts forth another  
 display in the autumn.

*Fagopyrum esculentum*, Mœnch. Buckwheat. Alien.

183-. Near Wood House, Skircoat.—*Herb. S.K.*

**Rumex conglomeratus**, Murr.—96.

Native. British type. P. June-August.

1840. Hebden Bridge, &c.—*S. Gibson*; *Baines' Fl. Add.*

Infrequent, in waste ground, chiefly about the canal:  
 Elland, Copley, Hebden Bridge.

**Rumex sanguineus**, L.—90. Bloodwort Dock.

Native. British type. P. June-August.

Todmorden.—*J. Nowell*; *Lees' Flo.* [1867. Shibden.—*J.W.*]

The type with red veins is hardly ever seen.

Var. **viridis**, Sibth. Wood Dock.

1834. In a field at Woodhouse in Skircoat.—*Herb. Leyl.*

1841. Ive House Clough, Warley.—*Herb. S.K.*

Very common in hedges and woods, and by road sides.

**Rumex obtusifolius**, L.—109. Dock.

Native. British type. P. July-August.

1834. Everywhere.—*Herb. Leyland.*

1844. Luddenden.—*S. King.*

Very common on road sides and waste ground.

**Rumex crispus**, L.—111. Dock.

Native. British type. P. July-September.

Shibden-dale, &c., frequent.—*Herb. Leyland.*

1844. Luddenden.—*S. King.* 1867. Shibden.—*J.W.*

Common on road sides, waste ground, &c.

*Rumex alpinus*, L. Monk's Rhubarb.

Alien. P. July-August.

1878. Near the Springs, Hareley Wood, Todmorden, (naturalised).—*Davis and Lees, West Yorkshire.*

Still at Springs, Stansfield, also naturalised near Cop Riding farm, Stainland.

**Rumex Acetosa**, L.—112. Sorrel. Sweet Dock.

Native. British type. P. May-July.

1844. Luddenden.—*S. K.* 1867. Shibden, common.—*J.W.*

Very common in meadows and pastures.

**Rumex Acetosella**, L.—112. Sheep's Sorrel.

Native. British type. P. May-August.

Mill House.—*Herb. Leyland.* 1867. Shibden.—*J.W.*

Very common in poor pastures and rough ground on to the moors.

#### ARISTOLOCHIACEÆ.

**Asarum europæum**, L.—6. Asarabacca.

Denizen. ? Extinct. Local type. P. April-May.

1775. In a hedge belonging to the Lane-end in Norland, near Sowerby Bridge.—*J. Bolton.*

1828-1842.—Broadbottom Wood, near Mytholmroyd.—*Herb. Leyland, Gibson, and King.*

1835. Plentiful in Broadbottom Wood, near Mytholmroyd, six miles from Halifax.—*Engl. Fl.* ; Harper-royd Clough, near Sowerby Bridge, three miles from Halifax ; *Winch, add.* ; *New Botanists' Guide.*

1862. There were only two or three small plants in 1858.—*C. Eastwood ; Miall's Flora.*

1888. Now quite gone (from Broadbottom).—*F. A. Lees.*  
Said to exist still near Todmorden.

#### [THYMELÆACEÆ]

[**Daphne Laureola**, L.—51. Spurge Laurel.

Extinct Denizen. English type. Shrub. March-May.

1775. Daisy Bank Wood and Hollings Wood in Warley ; at the top of Blackwall Bank in Warley ; several fields near Waterhill in Warley.—*J. Bolton*.

1830. Daisy Bank Wood, Warley ; 1831. Magson House Wood, Warley.—*Herb. S. King*.

1836. Magson House Wood, Warley. Nearly extirpated by the nursery men.—*Herb. Leyland*.]

#### EUPHORBIACEÆ.

**Euphorbia Helioscopia**, L.—112. Sun Spurge, Wart-wort.

Native. British type. A. June-August.

1775. In several fields about Lower Willow Hall in Skircoat.—*J. Bolton*.

Infrequent, in gardens and cultivated ground : Lightcliffe, Copley, Illingworth.

*Euphorbia amygdaloides*, L.—51. Wood Spurge.

Alien. English type. P. March-May.

1897. Near Gate Head, in Greetland, on the roadside ; reported by Mr. R. Wood who had it confirmed at Kew.

**Euphorbia Peplus**, L.—105. Garden Spurge

Native. British type. A. June-September.

Infrequent, in gardens and waste ground : Elland, Skircoat, Copley.

**Euphorbia exigua**, L.—83. Dwarf Spurge.

Colonist. English type. A. July-September.

1775. In several places, generally amongst corn. In a bank belonging to Beach, near Sowerby Bridge ; several fields at Steps, in Warley, in plenty.—*J. Bolton*.

Cornfields in Southowram, Lightcliffe, Norland, &c.—*Herb. Leyland*.

*Euphorbia Lathyris*, L. Caper Spurge

Alien. B. June-July.

1841. Luddenden Foot.—*S. King ; Herb. Tatham*.

1855. In the garden at Lane House, frequent.—*Herb. S.K.*

**Mercurialis perennis**, L.—107. Dog's Mercury.

Native. British type. P. March-May.

1844. Luddenden—*S. King*. 1867. Shibden—*J. Walker*. Very common in woods and hedge-banks.

#### URTICACEÆ.

**Ulmus montana**, Stokes—98. Wych Elm, "Witch Hazel."

Native. British type. Tree. March-April.

Luddenden.—*Herb. Leyland.*

Common about Luddenden.—*Herb. S. King.*

1867. Woods in Shibden, common.—*J. W.* (though under the name *H. suberosa*, a mistake for this.)

Common in woods and cloughs.

*Ulmus surculosa*, Stokes—60. (*U. campestris*, Sm.) English Elm.

Alien. English type. Tree. March-April.

Only a planted tree in this district, and not frequent.

**Humulus Lupulus**, L.—86. Hop.

Denizen. English type. P. July-August.

1862. Salterhebble.—*J. Bates ; Miall's Flora.*

1867. Near Scout Hall, in Shibden ; near Cromwell Wood, in Southowram.—*J. Walker.* [*Lees' Fl.*

1888. Near Todmorden, not truly wild.—*A. Stansfield ;*

Still at Salterhebble, and in a few other places, probably in all cases introduced.

**Urtica dioica**, L.—112. Stinging Nettle.

Native. British type. P. June-September.

1867. Shibden.—*J. Walker.*

Very common in hedges, woods, roadsides, and waste places.

**Urtica urens**, L.—108. Small Nettle.

Native. British type. A. July-September.

1775. About Goldsmith's grove (=grave), and in a lane near Stannary, both near Halifax.—*J. Bolton.*

1842. Woodhouse Scar, near Halifax—*Herb. S. King.*

Rare, on waste ground and "tips:" Wheatley, Salterhebble, Elland Park Wood.

#### [MYRICACEÆ]

[**Myrica Gale**, L.—85. Sweet Gale, Sweet Willow.

Extinct Native. British type. Shrub. May-June.

1775. Upon Warley Moor towards the top, in a wet, swampy place, about a mile above Fly-brass-lath, going on the flat of the moor, below the inclosed ground, towards Howarth parish.—*J. Bolton*].

#### CUPULIFERÆ

**Betula verrucosa**, Ehrh.—109 (*B. alba*. L.) Birch.

Native. British type. Tree. May.

1840. Sowerby Dean.—*Herb. S. King.*

1867. Shibden, not common.—*J. Walker*.

Infrequent, in woods.

**Betula pubescens**, Ehrh.—71. (*B. glutinosa*, Wallr.) Birch.

Native. British type. Tree. May.

1867. Shibden, not common.—*J. Walker*.

Common in woods, stony rough ground and clough edges.

**Alnus glutinosa**, Medic.—110. Alder.

Native. British type. Tree. March-April.

1841. Common about Luddenden.—*Herb. S. King*.

1867. Shibden.—*J. Walker*.

Common by stream sides.

**Corylus Avellana**, L.—111. Hazel.

Native. British type. Shrub. February-March.

1840. Luddenden.—*Herb. S. K.*

1867. Shibden, common.—*J.W.*

Common in woods and cloughs.

**Quercus Robur**, L.—105. Oak.

Native. British type. Tree. May-June.

1562. "It was told me by a learned man, a frende of myne, that in the year of our Lorde mdlvii, that there was a great plentye of galles found upon oke leves in the North countre of England and namely about Hallyfax." *Turner's Herball*, ii, 109.

1842. Common about Luddenden.—*Herb. S. King*.

1867. Shibden and Shroggs Wood, common.—*J.W.*

Common, but not reaching any great size, the soil on the rocky slopes where it is most abundant being too shallow. Both varieties—*pedunculata*, Ehrh. and *sessiliflora*, Salisb.—occur.

**Castanea sativa**, Mill. Chesnut. Alien, always planted.

1867. Banks of Red Beck, near Lee Lane, in Shibden.—*J.W.*

**Fagus sylvatica**, L.—67. Beech.

Denizen. English type. Tree. May.

1867. Shibden, common.—*J. Walker*.

In most mixed woods and in the cloughs. It does not seem to be merely an artificially planted tree in this district, though often such; and though it does not flower freely, seedlings have been observed.



## SALICINEÆ.

**Salix pentandra**, L.—58. Sweet-bay Willow.

Native. Scottish type. Tree. June.

[Dam Head, Shibden Dale. Entirely destroyed, 1836.—  
*Herb. Leyland.*]

1840. Near Sowerby Bridge.—*Herb. S. King.*

1888.. Calder Vale, many places to junction with Aire.—  
*F. A. Lees.*

Rare : Elland.—*W. West.*

**Salix fragilis**, L.—90. Crack Willow.

Native. British type. Tree. April-May.

1867. Dam Head in Shibden, common.—*J. Walker.*

Infrequent, by stream sides : Walter Clough ; between  
Elland and Brighouse, Blackburn Valley, West Vale.

× **alba (viridis, Fr.)**—14.

1840. *S. Russelliana*, Mytholmroyd, *S. Gibson* ;  
*Herb. S. King.*

**Salix alba**, L.—92. White Willow.

Native. British type. Tree. April-May.

No record, though it probably occurs.

Var. **vitellina**, L. Golden Osier.

1833. Mytholmroyd.—*Herb. Gibson.*

**Salix cinerea**, L.—106. Sallow.

Native. British type. Small tree. April-May.

Foster Scar.—*Herb. Gibson.*

Infrequent, in thickets and rough ground in the cloughs :  
Copley, West Vale, &c.

Var. **aquatica**, Sm.

In wet rough ground in Broadhead Clough,  
near Mytholmroyd, and probably elsewhere

**Salix aurita**, L.—106.

Native. British type. Shrub. April-May.

1840. Colden Clough.—*Herb. Gibson.*

Rather common in the cloughs, in thickets and boggy  
ground, generally just above the woods, from 700 to 1100  
feet. : Ogden, Luddenden Dean, Crimsworth Dean,  
Hippings Clough, &c.

**Salix Caprea**, L.—106. Sallow, Palm, “Paume.”

Native. British type. Small tree. March-April.  
Foster Scar.—*Herb. Gibson*.

1867. Shibden and Ogden, common.—*J. Walker*.

Very common in rough waste ground, about old quarries and mills, in woods and in the cloughs, and on railway banks.

**Salix repens**, L.—98.

Native. British type. Shrub. May.

1775. *S. rosmarinifolia*. Towards the top of Illingworth Moor, near the side of Ogden Clough.—*J. Bolton*.

1834. *S. fusca*, Norland Moor; Var. *repens*, Ogden Clough.—*Herb. Leyland*.

*S. fusca*, Stansfield Moor.—*Herb. Gibson*.

Rare, in the cloughs; Norland, Ogden, Broadhead Clough Mytholmroyd.

**Salix viminalis**, L.—88. Osier.

Native. British type. Small tree. April-May.  
Mytholmroyd; near Stoodley Mill.—*Herb. Gibson*.

1840. Mytholmroyd.—*S. G.*; *Herb. S. King*.

Infrequent, by stream sides: near Bower's Mill, Barkisland; Calder banks between Elland and Brighouse.

× **Caprea (Smithiana)**, Willd.)

Near Bower's Mill, Barkisland.

[*Salix reticulata*, L.—5. Error. Highland type.

1775. Top of Norland, Rishworth and Warley moors, here and there, not plentiful.—*J. Bolton*.]

**Populus alba**, L.—60. White Poplar.

Denizen. English type. Tree. April.

1867. Damp woods in Shibden, not common.—*J. Walker*.

Rare: Shibden, Ryburn Valley.

**Populus tremula**, L.—105. Aspen.

Native. British type. Tree. April.

1833. Near Lumb Mill (Hebden Bridge).—*Herb. Gibson*.

1841. Kershaw House Farm, Midgley; Studley Bridge near Todmorden.—*Herb. S. King*.

1867. Near Walter Clough, not common.—*J. Walker*.

1888. Hebden Valley.—*F. A. Lees*.

Rare.

*Populus nigra*, L. Black Poplar.

Alien. Tree. April.

1841. Planted near Luddenden.—*Herb. S. King.*

1867. Dam Head in Shibden, common.—*J. Walker.*

In plantations, &c.

#### EMPETRACEÆ.

**Empetrum nigrum**, L.—72. Crowberry.

Native. Scottish type. Shrub. April-May.

1775. Norland, Warley, Sowerby and Rishworth moors: in Snake-hill, near the town of Halifax.—*J. Bolton.*

1830. Midgley and Warley Moors, common; 1847. Castle Carr.—*Herb. S. King.*

1840. On all the high moors in the neighbourhood of Halifax. — *Baines' Flora.*

1862. Beacon Hill, Halifax; Warley; Shroggs.—*J. Bates; Miall's Flora.*

1867. Above High Green Wood, on the banks of the river Hebden.—*J. Walker.*

1888. On nearly all the Calder moorlands.—*F. A. Lees.*

Very abundant on the high moorlands, from Ogden to Blackstone Edge and Gorple Stones; gone from Beacon Hill and Snake-hill, but still on the rocks at Woodhouse Scar, Skircoat.

#### CERATOPHYLLLEÆ.

**Ceratophyllum demersum**, L.—? Hornwort.

Native. English type. P. July-October.

Only in the Canal near Salterhebble, where it was first observed by the late *H. T. Soppitt*, in 1895.

#### CONIFERÆ.

[**Juniperus communis**, L.—77. Juniper.

Native. Extinct. British type. Shrub. May-June.

1775. A few plants towards the top of Illingworth Moor, but they were very small.—*J. Bolton.*]

*Taxus baccata*, L.—52. Yew. "View Trees."

Alien. British type. Tree. March-April.

1674. "4 view trees set about my house, Sept. 1st, 1674." *Rev. Oliver Heywood, Event Book; Works, ed. J. H. Turner, iii. p. 213.* Also see *idem* vol. ii, pp. 166 & 169, and *Notes and Queries* for 1884 p. 130 with respect to the name of a farm, "View Trees," at Lightcliffe.

1867. Decayed and hollow trunk in front of Scout Hall, (Shibden). The churchyard at Ripponden is planted round with about eighty yew trees, trimmed in the shape of funeral plumes.—*J. Walker*.

The finest specimens are at Midgehole and Mytholm, Hebden Bridge. Heywood's yews are gone.

*Pinus sylvestris*, L.—17. Scotch Fir.

Alien. Highland type. Tree. April-May.

1840. Halifax.—*Herb. S. King*.

1867. Commonly met with in plantations.—*J. Walker*.

A planted tree, but not very common (because it is soon killed by smoke near the towns), except in the woods in the Hebden Valley, which are rich in conifers.

#### HYDROCHARIDÆ.

***Elodea canadensis***, Michx. Canadian Pondweed.

Denizen. British type. P. June-September.

The absence of any previous record prevents an accurate estimate of the date of its arrival here, but judging from negative evidence, it cannot have been much earlier than 1870. It is now common in the canal, ponds and mill-dams in the valley bottom; also in "Walton's Pond," near Park Nook, Southowram; and in the dam at Grove Mills, Ovenden.

#### ORCHIDÆ.

***Neottia Nidus-Avis***, Rich.—86. Bird's-nest Orchid

Native. British type. P. June-July.

1878. Hareley Wood, Todmorden.—*Davis and Lees' West Yorks.* [*Stansfield; Lees' Flora.*]

1888. Below Rag Scout, Harley Wood, Todmorden.—*A.* Very rare, in woods; the only additional record has been Sun Wood, Lightcliffe (1898).

***Listera cordata***, R. Br.—58. Least Tway-blade.

Native. Scottish type. P. June-July.

1775. Upon a moor in Bradshaw, near to where they get clay for pipes, along with *Trientalis*; also on some rotten mossy places towards the top of Rishworth Moor.—*J. Bolton*.

1823. Robin Hood Bed; 1834, in a wood near Lumb Mill (Hebden Bridge); Widdop.—*Herb. Gibson*.

On the hill above Causey Foot—with the *Trientalis*.—*Herb. Leyland*.

Way Pit, top of Booth Dean; Swill Hill.—*Herb. S. K.*

1840. On a moor called Swill Hill.—*Baines' Flora*.

1862. Near Blagden Bridge, between Hebden Bridge and Colne.—*C. Eastwood; Miall's Flora* (Blagden=Blakedean=Widdop).

1867. Ogden Clough, near the great rock, not common.—*J. Walker*.

1888. Ogden Clough.—*F. A. Lees*; Stansfield Moor, and near the Rirdge Inn at the bottom of Widdop, and Robin Hood Bed, Blackstone Edge.—*A Stansfield; Lees' Flora*.

Under various descriptions five or six stations are here enumerated; probably it still remains, though difficult to find and not recently recorded.

**Listera ovata**, R. Br.—105. Tway-blade.

Native. British type. P. June-July.

1834. In a pasture adjoining Law Wood, Langfield.—*Herb Leyland*.

Midgehole Wood (Hebden Bridge).—*Herb. Gibson*.

183-. About Luddenden, sparingly.—*Herb. S. King*.

1867. Luddenden Dean.—*J. Walker*.

Rather rare, though abundant in a meadow in Crimsworth Dean; Luddenden Dean.

**Epipactis latifolia**, All.—86. Helleborine.

Native. British type. P. July-August.

1775. In Grimescar Wood, near Rastrick—nowhere else.—*J. Bolton*.

Amongst the trees in Fixby Park, as you enter from Elland.—*Herb. Leyland*. Fixby Park—*Herb. Gibson*.

1836-1852.—Fixby Park; 1854, Binroyd Clough (Norland).—*J. Stephens; Herb. S. King*.

1862. Fixby Park.—*C Eastwood; Miall's Flora*.

Rare, though apparently increasing, in woods: Elland Park Wood; Harrow Clough, Stainland; Mapledean or Binroyd Clough, Norland; City Wood, Hebden Bridge; probably still at Fixby (= Grimescar Wood).

[**Orchis ustulata**, L.—43. “Little Purple-flowered Orchis.”

Native or error; extinct. Germanic type. P.

1775. Scarce hereabouts. Only a few plants in a field near Butterice End, in Norland, and a few more in a field near Katty's Well, in Warley.—*J. Bolton.*]

[*Orchis militaris*, L.—5. Error.

1775. In the Park at Howroyd, in Barkisland. No where else.—*J. Bolton.*]

**Orchis mascula**, L.—106. Early Purple Orchid.

Native. British type. P. May.

1839. Bankhouse Farm (Salterhebble).—*J. Shepherd*; Norland; Hirst Wood (Hebden Bridge).—*Herb. Gibson.*

1867. Upper Shibden.—*J. Walker.*

Infrequent, in pastures and woods: Shibden; Elland Park Wood; Rawroyd Clough, Barkisland; Blackshaw Clough, Soyland; Luddenden Dean; Crimsworth Dean.

**Orchis incarnata**, L.—67. Marsh Orchid.

Native. British type. P. June.

1888. Rare in Upper Calderdale.—*Lees' Flora.*

Certainly rare, if it occurs at all; a record for Luddenden Dean perhaps refers to this segregate, though more probably to the next.

**Orchis latifolia**, L.—42 (agg. 105). Marsh Orchid.

Native. British type. P. July.

Rare: abundant in the bog in Broadhead Clough, Erringden, near Hollock Lea, flowering at the end of July.

**Orchis maculata**, L.—108. Spotted Orchid.

Native. British type. P. June-July.

Ogden, &c.—*Herb. Leyland.* Owlter Bank.—*Herb. Gibson.*

1867. Upper Shibden and Ogden.—*J. Walker.*

Infrequent, though more common than the other orchids, in damp meadows and woods: Ogden, Lightcliffe, Stainland, Rishworth, Cragg Vale, Luddenden Dean, Crimsworth Dean, Widdop, &c.

**Habenaria conopsea**, Benth.—98. Fragrant Orchid.

Native. British type. P. June-July.

1834. Shibden-dale, &c.; pastures adjoining Law Wood, Todmorden.—*Herb. Leyland.*

1867. Upper Shibden and Ogden.—*J. Walker.*

1888. Todmorden.—*A. Stansfield*; *Lees' Flora.*

Rare: in a meadow in Crimsworth Dean.



**Habenaria albida**, R. Br.—48.

Native. Scottish type. P. June-July.

1775. In mountainous pastures about the top of Warley ; in a field near to Binn-royd in Norland. Found by Mr. Stephen Hartley.—*J. Bolton*.

1829. Luddenden Dean, &c.—*Herb. S. King*.

1877. Back Rough, near Portsmouth, Todmorden.—*A. Stansfield*. "This station is, perhaps, just over the county boundary, and therefore in Lancashire."—*Lees' Flora*. Back Rough, in Redwater Clough, is just within the county and parish boundary.

**Habenaria viridis**, R. Br.—97. Frog Orchid.

Native. British type. P. June-August.

1837. Stansfield Moor ; 1838, near Rastrick ; pastures in Shibden-dale and other places near Halifax, not very common.—*Herb. Leyland*.

Rake End Common (Erringden).—*Herb. Gibson*.

1862. Ogden Clough.—*J. Bates ; Mialls' Flora*

1867. Mixenden, towards Ogden : very local and difficult to find.—*J. Walker*.

Rare, in meadows and pastures : Hunter Hill, Mixenden ; Luddenden Dean ; Cragg Vale ; Rake Head, Erringden ; Crimsworth Dean ; High Green Wood, Heptonstall.

**Habenaria bifolia**, R. Br.—89. Butterfly Orchid.

Native. British type. P. June-July.

1775. In a field near Coley Chapel ; several fields about Rastrick ; a field near Howroyd in Barkisland.—*J. Bolton*. Norland Moor, &c., frequent.—*Herb. Leyland*.

Crimsworth Dean.—*Herb. Gibson*.

1867. Fields at Ogden, and Luddenden Dean.—*J.W.*

1888. Todmorden district.—*A. Stansfield ; Lees' Flora*.

Rare, in moorland pastures : Luddenden Dean, Crimsworth Dean. It is worthy of note that a particular meadow in Crimsworth Dean yields some six orchids.

**Habenaria chloroleuca**, Rid.—87. (*H. chlorantha*, Bab.)

Native. British type. P. July. Butterfly Orchid.

1838. Near Mytholmroyd.—*S. Gibson ; Baines' Flora*.

1888. Todmorden Valley cloughs.—*A. Stansfield ; Lees' Fl.*

Rare: Luddenden Dean, Crimsworth Dean. There is some confusion in the records between this and the previous one; both however occur.

## IRIDEÆ.

*Iris fetidissima*, L.—49. Fœtid Iris.

Alien. English type. P. June.

1893-94. Tag Lock, below Elland. It may still be there but has not been reported lately.

**Iris Pseudacorus**, L.—112. Yellow Flag.

Native. British type. P. June-July.

1775. In a corner of a field above Copley's Mill, between the river and canal; in a meadow near Luddenden Foot in plenty.—*J. Bolton*.

1840. Wade Wood, Luddenden Dean.—*Herb. S. King*.

1867. On the banks of the stream in Luddenden Dean.—*J. Walker*.

Rare, still in some quantity in Wade Wood; also at Tag Lock, Elland, and Exley Bank.

[*Crocus vernus*, All. Spring Crocus. Alien.

1867. In a meadow near Ripponden, rare.—*J. Walker*.]

**Crocus nudiflorus**, Sm—8. (*C. speciosus*, Hook). Autumn Crocus.

Denizen. Intermediate type. P. September.

1775. *Colchicum autumnale*. Meadows about Savile Green, near Halifax, in plenty; a few in a pasture at Hill in Warley.—*J. Bolton*.

1787. *Crocus sativus*, about Halifax. —*Rev. W. Wood, Withering's Syst. Arr.* [Guide.

1805. Pastures near Halifax.—*Rev. W. Wood. Botanists'*

1820. Fields at Bull Close; near Halifax.—*Herb. Gibson*.

Fields at Well Head, &c.—*Herb. Leyland*.

1835. Fields at Savile Green, Halifax. This is *C. speciosus* which differs from *C. nudiflorus* in the greater length of the stigma.—*N. J. Winch*; 1837—In many fields near Halifax, naturalised, and not distinct from *C. speciosus*.—*R. Leyland, MS. note*; *New Botanists' Guide*.

1837. Near Halifax.—*Herb. S. King*.

1840. Meadows at Well Head, Savile Green, and several other places near Halifax.—*Baines' Flora*.

1862. Well Head fields near Halifax.—*C. Eastwood*; Birkby.—*Hudd. Nat. Hist.*; near Ovenden Hall and Ovenden Wood.—*J. Bates*; *Miall's Flora*.

1877. *Crocus sativus*. In a field near Great House, Eastwood (two miles east of Todmorden), possibly an outcast from a garden, but occurs in some quantity.—*A. Stansfield*. No specimen examined, and I suspect that the Calder Valley plant is all *C. nudiflorus*; both are autumn bloomers, and the stigmas vary much in strength of scent.—*F. A. Lees* in *Flora*.

The above records all refer to *C. nudiflorus*, which was also first described as *Colchicum* at Nottingham (1738), and as *C. sativus* at Derby. It is found more frequently about Halifax than in any other district in England, except South Lancashire, though the previously published stations are not numerous. Its probable origin in the district is discussed elsewhere, but an acquaintance with its Halifax stations shows conclusively (1) that it cannot be merely a garden escape or outcast; (2) that it is not confined to low-lying river-side meadows. It is now found in the following localities: (i.) Well Head Fields, Halifax; in considerable quantity in the pasture, and several patches in the meadow, between Clover Hill and Skircoat Road; also a few bulbs in the adjoining vicarage glebe. It does not appear to remain at Savile Green itself, which is entirely occupied by gardens and residences, but the two places are practically the same station. (ii.) Coley, Winter Edge Farm (1895). (iii.) Ovenden Hall; in considerable quantity in two or three fields in Grove Lane, on the side further from the Hall, most abundant in the hedge side. (iv.) Watkinson Hall Park, Ovenden; south side of the railway cutting (1893). (v.) Ovenden Brook, north of Holmfield; in numerous fields near Holdsworth to Lower Scholecroft and Woodlands Farms, bordering the railway cutting and the stream for about a mile, ascending to about 750 feet. Only on the right bank of the stream, the left is composed of shales and clay of lower coal measures. In some of the fields, which are occasionally brought under the plough, it is confined to the edges, where, however, it is abundant. (vi.) Spring Gardens, Wheatley; abundant in a meadow below Ramsden Wood, where it has been known to residents for more than eighty years. (= Ovenden Wood of 1862). This station is about a mile west of Ovenden Hall and the Hebble Valley. (vii.) Warley

Clough; sparingly in the small clough above the Burnley Road, behind the brewery. This is identical with Bolton's station, "Hill in Warley," now called Fernhill. (viii.) The Hollins, Warley; in some of the fields, also along the drive, and in the plantation, into which it has probably been introduced from the fields. (ix.) Cold Edge, Warley; abundant in a meadow on the roadside, to the south of Withins Gap Farm. The station is 1400 feet above sea level, on the ridge of the moors dividing Calderdale from Airedale. According to a gamekeeper, it has been there fifty years, and was formerly in a corner of the field near the house, but was probably distributed when the high-road was widened, and the earth spread on the field. (x.) High House Farm, Midgley; very abundant in two fields at an altitude of 850 feet, and known to have been there forty years. It has also been found in small quantity lower down the Luddenden Valley, near Booth. (xi.) Shaw Edge Farm, Soyland (700 feet); very abundant in a meadow between the farm and Sage Wood (1893). (xii.) Eastwood; the plant at Great House proves, on examination, to be *C. nudiflorus*, as suggested in *Lees' Flora*. There is only one patch in a meadow below the house at 750 feet. It has also been stated to grow between the canal and the Calder, on the border of Elland Park Wood (1895), but I have failed to find it there. Just outside the parish, it occurs in considerable quantity at Birkby, between Fixby and Huddersfield.

#### AMARYLLIDÆ.

#### **Narcissus Pseudo-narcissus**, L—76. Daffodil.

Native. English type. P. April.

1724. Near Halifax, precipue Coley Hall.—*Ray's Synopsis*.  
 1775. In several fields at Steps in Warley; thickets here and there along the borders of Ripponden Brook, from Sowerby Bridge to Ripponden; wood near St. Ann's Chapel (Southowram).—*J. Bolton*.  
 1836. Magson House Wood.—*Herb. Leyland*.  
 1839. Kershaw House Farm.—*Herb. S. King*.  
 1840. Woods near Halifax, common.—*Baines' Flora*.  
 1862. Stainland, Shibden and Riding Bridge. — *Miall's Flora*.  
 1867. Pastures on the banks of the stream below Hipperholme; Upper Shibden, rather sparingly.—*J. Walker*.  
 1888. Todmorden.—*A. Stansfield; Lees' Flora*.

Infrequent, in woods and fields, too conspicuous not to be a diminishing species; in part it may be a denizen, but it is also a native, and has formerly been abundant. It now occurs at Coley Hall; in Wheatley Valley; Hollins Wood; Sage Wood, Soyland and fields adjoining; Rishworth; Cragg Vale; Broadbottom, Wadsworth; Beverley Wood, near Eastwood. It formerly grew in Bankhouse Wood, Salterhebble; and about Aniker Pit and in Daffodil Wood, in Upper Shibden.

*Narcissus biflorus* Curtis. Primrose Peerless.

Alien. P. April—May.

1775. *N. poeticus*. In a meadow in Warley Wood; a close belonging to Handgreen, in Warley; a field near Kebroyd Mill in Sowerby.—*J. Bolton*.

1805. Near Halifax.—*Rev. W. Wood; Botanists' Guide*.

1834. Fields in Sowerby Dean.—*Herb. Leyland*.

183-. Near Friendly Inn, Warley; 1844. in a field below Friendly Inn, Warley.—*Herb. S. King*.

1840. Meadows at Sowerby and Warley, naturalised.—*Baines' Flora*.

1862. Numerous localities near Halifax.—*Miall's Flora*.

1867. *N. poeticus*. Near Ogden, rare.—*J. Walker*.

Only one species is probably meant, and this would be a naturalised garden escape; nothing is now known of it.

***Galanthus nivalis*, L.—?** Snowdrop.

Denizen. P. March.

1836. Cromwell Bottom Wood.—*Herb. Leyland*.

1840. Cromwell Bottom Wood.—*Baines' Flora*.

1867. Cromwell Wood, in Southowram, rare.—*J. Walker*.

Rare and very sparingly, in Cromwell Wood and Luddenden Dean; also at Coley Hall with the daffodil.

#### DIOSCOREÆ.

***Tamus communis*, L.—69.** Black Bryony.

Native. English type. P. June-July.

Woods near Halifax, frequent.—*Herb. Leyland*.

1831. Several places in lower parts of Warley; 1842. Luddenden.—*Herb. S. King*.

1867. Shibden and Hipperholme.—*J. Walker*.

Almost confined to the lowest and eastern portion of the parish, where it is frequent in woods, as Norland Clough, North Dean Wood, Elland Park Wood, Walter Clough, Hove Edge and Sun Wood, near Lightcliffe. It also occurs at one place in the Hebden Valley, viz.: Overwood, at the unusual altitude of 700 feet.

#### LILIACEÆ.

*Ruscus aculeatus*, L.—29. Butcher's Broom.

Alien, in plantations. English type. Shrub. Feb.-Ap. 1862. Woods at Fixby.—*Hud. Nat. Hist.*; *Miall's Flora*.

*Polygonatum multiflorum*, All.—32. Solomon's Seal.

Alien. English type. P. June.

1815. Above Upper Range in Northowram, amongst some bushes, where the causeway crosses the road; destroyed June, 1837.—*Herb. Leyland*.

Doubtless a garden outcast, as also near Lidgate where it has been reported recently.

*Convallaria majalis*, L.—58. Lily of the Valley.

Native. Germanic type. P. June.

1775. Edge of Skircoat Moor; top of Woodhouse Scar; top of North Dean, in Greetland; in great plenty in a wood near little Even, in Barkisland.—*J. Bolton*.

Lee Bank, Shroggs; Jagger Wood, Greetland, &c.—*Herb. Leyland*.

Mayroyd Wood (Hebden Bridge).—*Herb. Gibson*.

1840. Lee Bank, Shroggs, near Halifax; woods in the vale of Todmorden, frequent.—*Baines' Flora*.

1841. Scar below Lee, near Hebden Bridge; Shroggs, near Halifax; Turner Wood, Rishworth.—*Herb. S. King*.

1862. Todmorden, frequent; Shroggs, near Halifax (*J. Bates*); Lee Wood, Hebden Bridge (*C. Eastwood*); *Miall's Flora*.

1867. Border of the Woodside plantation in Old Lane, near the railway arch, and the station will in all probability be destroyed by the railway cutting.—*J. Walker*.

1888. Catholes Clough, Todmorden, and Heptonstall Eaves Wood, truly wild. *S. Hailstone*, rep. *A. Stansfield*; *Lees' Flora*.

Rare, in woods; Turner Wood and Bogden Clough, Rishworth; sparingly in Heptonstall Eaves; in Elland Park Wood, but introduced with garden rubbish; said to be still in North Dean Wood.

**Allium ursinum**, L.—108. Garlic, Ramsons.

Native. British type. P. May-June.

1867. Shibden, common.—*J. Walker*.

Common and abundant in woods throughout the district.

**Scilla festalis**, Salisb.—112 (S. nutans, Sm.) Bluebell.

Native. British type. P. Late April—early June.

1775. Thickets and hedges.—*J. Bolton*.

Woods near Halifax, common.—*Herb. Leyland*.

1867. Woods in Shibden, abundant.—*J. Walker*.

Common and very abundant in woods throughout the parish.

[*Colchicum autumnale*. L.—40. Meadow Saffron.

Error for *Crocus nudiflorus*, q. v.]

**Narthecium ossifragum**, Huds.—95. Bog Asphodel.

Native. British type. P. Late June-July.

1775. In plenty on Warley, Sowerby, Soyland, and Norland moors, in marshy places.—*J. Bolton*.

Norland Moor, very common.—*Herb. Leyland*.

1841. Barkisland Moor.—*Herb. S. King*.

1867. Norland Moor.—*J. Walker*.

1888. Todmorden moors.—*A. Stansfield* and *F. A. Lees*.

Frequent on the moors on peat, but somewhat local in its distribution: Norland, Sowerby, Rishworth, Erringden, Saltonstall, and Wadsworth moors.

**Paris quadrifolia**, L.—73. Herb Paris. One-berry.

Native. British type. P. June.

1775. In North Dean Wood, towards Elland; Strangstry Wood, near Rastrick; in a clough near Upper Hollings, in Warley; and in Common Wood near Coley.—*J. Bolton*.

1836. Turner Clough, Rishworth; bottom of North Dean;

1837. Between Luddenden Church and Dean Mill.—*Herb. Leyland*.

1832. Near Luddenden; 1842. Opposite Peel House Mill, near Luddenden.—*Herb. S. King*.

Only now known at one station in Luddenden Dean, where it occurs very sparingly.



## JUNCACEÆ.

**Juncus bufonius**, L.—112.

Native. British type. A. July-August.

Bottom of Crown Nest Wood (Hebden Bridge).—*Herb. Gibson*. 1844. Luddenden Brook.—*S. King*.

Frequent in damp places, in fields and waste ground: Elland, Copley, Rishworth, Cragg Vale, Stainland (var. *fasciculatus*, Koch), Hebden Bridge, &c.

**Juncus squarrosus**, L.—107. Moor Rush.

Native. British type. P. June-August.

1841. Abundant on moors.—*Herb. S. King*.

Common and very abundant on all the moors on turf, probably not descending below 600 feet.

**Juncus effusus**, L.—112. Rush.

Native. British type. P. July-August.

1844. Luddenden Brook.—*S. King*. 1867. Shibden.—*J.W.*

Very common in wet pastures, cloughs, &c.

**Juncus conglomeratus**, L.—112. Rush.

Native. British type. P. July-August.

1844. Luddenden Brook.—*S. King*. 1867. Ogden.—*J.W.*

Frequent, but not so common as *J. effusus*, though taking its place in part at high levels: Warley Moor, Ogden, Rishworth, Cragg Vale, Widdop, &c.

**Juncus supinus**, Mœnch,—107. Rush.

Native. British type. P. July-August.

1840. Luddenden.—*Herb. S. King*.

Frequent, in marshy ground and bogs: Luddenden Dean, Rishworth, Hebden Bridge, &c.

**Juncus lamprocarpus**, Ehrh.—110. Rush.

Native. British type. P. June-August.

1840. Lane House Farm, Luddenden.—*Herb. S. King*.

Common, in marshy ground, ditches, and bogs.

**Juncus acutiflorus**, Ehrh.—111. Jointed Rush.

Native. British type. P. June-August.

1840. Castle Carr, Luddenden Dean.—*Herb. S. King*.

Frequent, in marshy ground: Fixby, Elland, Rishworth, Hebden Bridge, &c.

**Luzula vernalis**, DC.—108. (*L. pilosa*, Willd.) Hairy

Native. British type. P. April-May. [Woodrush.

1840. Hebden Bridge.—*Herb. Gibson.*

1840. Very common near Halifax.—*Baines' Flora.*

1867. Shibden.—*J. Walker.*

Common in woods, &c.

**Luzula maxima**, DC.—108. Great Wood-rush.

Native. British type. P. April-June.

Hirst Wood.—*Herb. Gibs.* 1844. Luddenden.—*Herb. S.K.*

1840. Woods at Halifax in the utmost profusion.—*Baines' Flora.* 1867. Shibden.—*J. Walker.*

1888.—In every wood in Calder Valley district.—*A. Stansfield, Lees' Flora.*

Very common in the wooded cloughs.

**Luzula campestris**, DC.—107. Field Wood-rush.

Native. British type. P. April-May.

1867. Shibden.—*J. Walker.*

Very common in pastures.

**Luzula erecta**, Desr.—107. (*L. multiflora*, Lej.)

Native. British type. P. May-July.

1832. Woods near Hebden Bridge.—*Herb. Leyland.*

1840. Hebden Bridge.—*Herb. Gibson.*

1840. Woods near Halifax, Todmorden, &c.—*Baines' Flora.*

1841. Lane House Farm, Luddenden.—*Herb. S. King.*

Very common on the moors and in moorland pastures.

#### TYPHACEÆ.

**Typha latifolia**, L.—81. Reed-mace, Bulrush, Cat's-tail

Native. English type. P. July-August.

Rare, in ponds: in quantity at Rishworth (500 ft.) and in a mill-dam at West Vale; perhaps not truly indigenous, as former records for the district are wanting.

[**Typha angustifolia**, L.—58. Lesser Reed-mace.

Extinct Native. English type. P. July-August.

1775. In a clay pit, near the bottom, in Norland, by Sowerby Bridge.—*J. Bolton.*]

**Sparganium ramosum**, Huds.—30. (agg.—108) Bur-reed.

Native. British type. P. July-August.

1840. Old House, Mill Dam.—*Widdup Lord; Herb. S. King.*

Rare, only in a few stations in the main valley, below 300 feet, but there abundant: Clay's mill dam, Luddenden Foot; Copley dykes; Tag Lock, Elland.

**Sparganium simplex**, Huds.—99. Bur-reed.

Native. British type. P. July-August.

In the old Cut, opposite Sterne Mill. —*Herb. Leyland.*

1862. Old Canal, Norland.—*S. King; Mialls' Flora.*

Rare, only in the dam of the soap works between Sterne Mill and Norland.

## AROIDEÆ

**Arum maculatum**, L.—84. Cuckoo-pint, Lords & Ladies.

Native. English type. P. May.

1832. Common about Luddenden.—*Herb. S. King.*

1867. Shibden.—*J. Walker.*

Infrequent, in woods; Sun Wood, Lightcliffe; Hipperholme; Elland Park Wood; Hollins Wood, Warley; Hebden Bridge; and no doubt elsewhere, but not abundant, and chiefly in the eastern part.

**Acorus Calamus**, L.—31. Sweet Flag.

Denizen. English type. P. July-August.

1862. Mill dam, Luddenden Foot, formerly planted.—*C. Eastwood; Miall's Flora.*

Still in Clay's mill dam; the aromatic root stock, known as "flag root" is sought after by boys to chew.

## LEMNACEÆ.

**Lemna trisulca**, L.—73. Duckweed.

Native. English type. A. June-July.

Rare, only observed in the canal at Salterhebble (1888).

**Lemna minor**, L.—106. Duckweed.

Native. British type. A. June-July.

1867. Shibden.—*J. Walker.*

Infrequent, in ponds and stagnant waters at low levels: Tag Lock, Elland; canal at Salterhebble; North Dean Wood; and Copley.

## ALISMACEÆ.

**Alisma Plantago-aquatica**, L.—100. Water Plantain.

Native. British type. P. July.

1830. In the canal at Salterhebble.—*Herb. S. King.*

1867. In the canal below the Wharf, and in the dam at Lee Bridge.—*J. Walker.*

Chiefly in the canal, at Tag Lock and Salterhebble; also in mill dams at West Vale and Bowers' Mill, Barkisland, all below 450 feet.

**Sagittaria sagittifolia**, L.—58. Arrow-head.

Native. English type. P. July-August.

1862. Halifax canal.—*Miall's Flora*.

1867. In the canal near Salterhebble.—*J. Walker*.

Still in the same locality, its only station.

#### NAIADACEÆ.

[**Triglochin palustre**, L.—110.

Unknown. British type. P. July.

No record from the parish, though a specimen from Shedden Clough (west of Stansfield Moor), is in *Herb. Leyland*.

It might be found in marshy ground, and there are many likely localities for it.]

**Potamogeton natans**, L.—100. Pondweed.

Native. British type. P. July-September.

[Ditches, Norland Moor.—*Herb. Leyland*.]

[1867. Ogden cloughs.—*J. Walker*.]

These and other records of the moorland pondweed refer to the next species. *P. natans* is a lowland plant, only likely to occur here between Luddenden Foot and Brighouse; it is only known to me at Tag Lock, Elland (200 ft.) where it is abundant towards the eastern end.

**Potamogeton polygonifolius**, Pour.—107. Pondweed.

Native. British type. P. July-September.

1841. Barkisland Moor edge, above Ripponden —*Herb S.K.*

1888.—Todmorden (*A. Stansfield*); Hebden Valley (*F. A. Lees*); Norland Moor.—*Lees' Flora*.

Common on or near the moors in streams, ditches and shallow pools, above 500 ft.; Norland Stream, Rishworth moors, Erringden, Ogden, Luddenden, Widdop, Stansfield moors, &c.

**Potamogeton crispus**, L.—94. Curled Pondweed.

Native. British type. P. July-August.

Near Carr Mill (Hebden Bridge).—*Herb. Gibson*.

1862. Halifax Canal; river Calder.—*Miall's Flora*.

Infrequent: Tag Lock, canal at Salterhebble, mill dam at West Vale.

**Potamogeton obtusifolius**, Mert. and Koch.—54.

Native. English type. P. July-September.

1862. *P. gramineus*. Halifax Canal.—*Miall's Flora*.  
Rare, only in the canal from Halifax to Salterhebble

**Potamogeton pusillus**, L.—101.

Native. British type. P. July-August.

1835. In the canal at Salterhebble.—*Herb. Leyland*.

Rare only in the canal towards Salterhebble and at Mytholmroyd.

**Potamogeton pectinatus**, L.—83.

Native. British type. P. July-August.

Infrequent, in the canal between Halifax and Salterhebble, first recorded in 1895 by *H. T. Soppitt*; in a mill dam at West Vale.

**Zanichellia palustris**, L.—71. Horned Pondweed.

Native. British type. A. June-August.

Rare, only in the canal at Salterhebble (250 ft.); first recorded in 1897.

CYPERACEÆ.

**Eleocharis acicularis**, R.Br.—73.

Native. English type. A. July-August.

1884. Var. *longicaulis*, in the canal between Ash-grove and Elland.—*Herb. Gibson*.

1844. In the Calder and Hebble Navigation Canal, near Halifax.—*S. Gibson*; spcm. in *Herb. Watson* and *Herb. Tatham*; both sub nom. var. *longicaulis*; merely an elongated water form.—*Lees' Flora*.

Infrequent, on the edge of the canal.

**Eleocharis palustris**, R.Br.—111.

Native. British type. P. June-July.

1834. Todmorden canal.—*Herb. Leyland*.

1840. Sowerby Bridge.—*Herb. S. King*.

Infrequent, in ditches and boggy ground: canal side, Salterhebble; Stanelly Clough, Stansfield, &c.

[*Eleocharis multicaulis*, Sm.—88.

Unknown. British type. P. July-August.

1857, Ogden moors.—*J. Walker*. Perhaps the preceding species is intended.]

**Scirpus pauciflorus**, Lightf.—91.

Native. British type. P. July-August.

Norland moor.—*Herb. Leyland.*

No recent record, but it is likely to occur in marshy ground on the moors.

**Scirpus cæspitosus**, L.—104.

Native. British type. P. May-July.

1831. On moors, very common.—*Herb. S. King.*

1842. Midgley Moor.—*Herb. Gibson.*

Very common on the moors on turf, from Ogden to Blackstone Edge and Stansfield Moor, ascending to the tops.

**Scirpus setaceus**, L.—108.

Native. British type. A. July-August.

1820. Ogden Clough.—*Herb. Leyland.*

1840. Winterburn Hill, Warley.—*Herb. S. King.*

Frequent in wet ground in the cloughs, west of Halifax: Midgley, Crimsworth Dean, Hollock Lea, Cob Clough.

**Scirpus sylvaticus**, L.—75. Wood Rush.

Native. British type. P. June-July.

1837. North Dean.—*Herb. Leyland.*

1840. North Dean, near Halifax.—*Baines' Flora.*

No recent record: it might occur still about Copley.

**Eriophorum vaginatum**, L.—90. Cotton Grass, "Hares-

Native. British type. P. April-June. [tail Rush.]

1775. Together (with *E. polystachion*) on boggy, marshy places, on Warley, Sowerby, and Rishworth Moors.—*J.B.*

1844. Booth Dean, Rishworth; 1854. Ogden Moors.—*Herb. S.K.* 1867. Ogden Moors.—*J.W.*

Wadsworth Moor, Midgley Moor.—*Herb. Gibson.*

Common on the moors on turf: additional localities are Norland, Erringden, Langfield, Stansfield and Heptonstall moors.

**Eriophorum angustifolium**, Roth.—109. (*E. polystachion*, L.)

Native. British type. P. May-June.

1775. With the preceding.—*J. Bolton.*

1841. Ogden. 1842. Luddenden Dean.—*Herb. S. King.*

Stansfield Moor.—*Herb. Gibs.* 1867. Ogden moors.—*J.W.*

Common on the moors in boggy ground: Norland, Soyland, Langfield, Erringden, Warley, Wadsworth, Heptonstall, Stansfield moors, &c.

**Rynchospora alba**, Vahl.—75.

Native. Extinct? British type. P. July-August.

1775. Moors of Sowerby, Rishworth, Warley, and Soyland, in boggy places.—*J. Bolton*.

1840. Blackstone Edge.—*Baines' Flora*.

No recent record: certainly rare now though perhaps not extinct

**Carex dioica**, L.—79.

Native. Scottish type. P. June-August.

1775.—On the edge of Warley Moor, just above Highroad Well.—*J. Bolton*. Bolton's *C. capitata*, in a swampy place, near Cromwell-bottom in Southowram, is also *C. dioica*..

1839. Widdop.—*Herb. Gibson*.

1841. Widdop, on the road to Colne.—*Herb. S. King*.

1888. Todmorden.—*A. Stansfield; Lees' Flora*.

**Carex pulicaris**, L.—107. Flea Sedge.

Native. British type. P. June-July.

1775. In a rushy field, near Mixenden Green, in plenty.—*J.B.* 1839. Ogden Clough.—*Herb. Leyland*.

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson*.

1867. Bogs on Ogden Moor.—*J. Walker*.

Infrequent, in moorland pastures and bogs: Wheatley, Ogden, Midgley, Cragg Vale, Crimsworth Dean, &c.

**Carex paniculata**, L.—92.

Native. British type. P. June-July.

1834-1841. Widdop.—*Herb. S. King, Leyland, and Gibson*.

**[Carex vulpina**, L.—86.

Native. Extinct? British type. P. June-July.

1775. In Toad-holes in Sowerby, and Dodgeroyd Wood, in Norland.—*J. Bolton*.]

**Carex muricata**, L.—78.

Native. British type. P. June-July.

Only recorded from Crow Nest Walk, Lightcliffe (1892).

**Carex echinata**, Murr.—110. (*C. stellulata*, Good).

Native. British type. P. June-July.

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson*.

1842. Lane House Farm, Luddenden.—*Herb. S. King*.



1867. Boggy places in Shibden.—*J. Walker.*

Very common in wet places in the cloughs.

**Carex remota**, L.—87.

Native. British type. P. June-July.

1838-1844. Luddenden.—*Herb. S. King.*

1841. Crow Nest Wood, Hebden Bridge.—*Herb. Gibson.*

Very common on the banks of the canal, streams, mill-dams, &c.

**Carex axillaris**, Good.—57.

Native. English type. P. June-July.

1840. *C. remota*, var. *axillaris*, Crow Nest Wood.—*H. Gib.*

**Carex curta**, Good.—76.

Native. British type. P. May-July.

1840.—Widdop.—*Herb Leyland.*

1844. In a bog at Denholme.—*Herb. S. King.*

1888. Stansfield Moor, &c., rare in Todmorden district.—*A. Stansfield; Lees' Flora.*

Frequent on the moors in bogs and ditches: Ogden, Rishworth, Blackstone Edge, Hollock Lea, Heptonstall, &c.

**Carex ovalis**, Good.—112.

Native. British type. P. June-July.

1840. Luddenden; 1844, Denholme.—*Herb. S. King.*

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson.*

1867. Ogden and Shibden.—*J. Walker.*

Common, in damp pastures, on canal banks, &c.

**Carex Goodenowii**, Gay—100. (*C. vulgaris*, Fr.)

Native. British type. P. May-June.

1840-43. Carr Green, Crimsworth Dean, Wadsworth Moor.—*Herb. Gibson.*

1841. Luddenden, Swill Hill.—*Herb. S. King.*

Very common on the moors and moorland pastures, and found throughout the parish. Gibson's Herbarium contains several reputed varieties from Hebden Bridge (*idiogynæa*, *simplex*, *Mænchiana*) in addition to the following.

Var. **Gibsoni**, Bab.

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson.*

1854. Said to be now lost by drainage.—  
*Baines' Flora, Supp.*

Var. **juncella**, Fr.

1888 Moss Hall, Stansfield Moor.—*A. Stansfield; Lees' Fl.*

**Carex flacca**, Schreb.—109. (*C. glauca*, Murr.)

Native. British type. P. May-July.

1836. Hebden Bridge.—*Herb. Gibson.*

Ogden Clough.—*Herb. Leyland.*

1841. Kershaw House Farm, Luddenden.—*Herb. S. King.*

Common, on moors and in moorland pastures

**Carex pilulifera**, L.—104.

Native. British type. P. May-July.

1838. Stansfield; 1841, near Halifax.—*Herb. Leyland.*

1838. Wood Hey, Hebden Bridge.—*Herb. Gibson.*

1840. Luddenden.—*Herb. S. K.* 1867. Shibden.—*J. W.*

1888. Hebden Valley.—*F. A. Lees.*

Common, on the moors and clough sides: Ogden, Luddenden Dean, Greetland Moor, Rishworth, Cragg Vale, Hebden Valley, Heptonstall Moor, &c.

**Carex verna**, Chaix.—96. (*C. præcox*, Jacq.)

Native. British type. P. May.

1855. Lane House, Luddenden.—*Herb. S. King.*

Wood Hey.—*Herb. Gibson.* 1867. Shibden.—*J. Walker.*

Common in dry pastures.

**Carex pallescens**, L.—90.

Native. British type. P. June-July.

1838. Scout Farm, Stansfield; 1841, Carr Green, Erringden.—*Herb. Leyland.*

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson.*

Rare, in the cloughs: Crimsworth Dean.

**Carex panicea**, L.—111.

Native. British type. P. June-July.

1836. Todmorden; Skircoat Moor, frequent.—*Herb. Leyl.*

1840-44. Luddenden and Denholme.—*Herb. S. King.*

1841. Wood Hey.—*Herb. Gib.* 1867.—Ogden.—*J. W.*

Common in the cloughs and moorland pastures.

**Carex pendula**, Huds.—75.

Native. British type. P. June-July.

1833. Bullace-tree Wood, Sowerby; Mill House Wood, Triangle. 1840. Turner Clough, Rishworth.—*Herb. S. King.*

1841. Turner Clough, Rishworth.—*Herb. Gibson.*

1843. Toad Holes Wood, Sowerby.—*Herb. Leyland.*

Rare, by stream sides in woods: still in Turner Clough, and very abundant and luxuriant in Elland Park Wood.

**Carex strigosa**, Huds.—35.

Native. English type. P. June-July.

[1862. Turner Clough; Wood near Triangle.—*C. Eastwood; Miall's Flora.*]

1895. Hardcastle Crags, Hebden Bridge, one plant only.—*Rev. Wm. Fowler; Naturalist, 1895, 238.*

**Carex sylvatica**, Huds.—87.

Native. British type. P. June-July.

1832-44. Lane House, Hollins Wood, and Shawholme, Luddenden.—*Herb. S. King.*

1841. — Carr Green, Hebden Bridge.—*Herb. Gibson & Leyland*

1867. Damp woods in Shibden.—*J. Walker.*

Rare in Woods: Bogden Clough, Rishworth.

**Carex lævigata**, Sm.—62.

Native. British type. P. June-July

1837. Ogden Clough; Carr Green, Erringden.—*Herb. Leyl.*

1840. Lane House Farm, Luddenden.—*Herb. S. King.*

1840. Common in the woods at Hebden Bridge. In Ogden Clough, Turner Clough, &c.—*S. Gibs. Baines' Fl.*

1841. Wood Hey and Crimsworth Dean.—*Herb. Gibson.*

1862. About Luddenden.—*C. Eastwood; Miall's Flora.*

1867. Ogden Clough.—*J. Walker.*

1888. Keb Cote, Stansfield.—*A. Stansfield; Lees' Flora.*

Common in marshy ground in the cloughs; additional localities are Hollock Lea, Cragg Vale; Bogden Clough, Rishworth; Stanelly Clough, Stansfield.

**Carex binervis**, Sm.—98.

Native. British type. P. June-July.

1837. Ogden; 1839. Turner Clough, Rishworth.—*Herb. Leyland.* [*Leyland.*]

1841. Carr Green, Hebden Bridge.—*Herb. Gibson* and

1841-44. Ogden Clough.—*Herb. S. K.* 1867. Ogden.—*J. W.*  
Common, on the moors and in the cloughs: Bogden Clough,  
Rishworth; Hollock Lea; Wood Top, Erringden;  
Stanelly Clough.

**Carex fulva**, Good.—84.

Native. British type. P. June-July.

1841. Carr Green, Erringden.—*Herb. S. K.* and *Leyland.*

1841. Wood Hey; 1843. Erringden.—*Herb. Gibson.*

Rare, on the moors: Ogden; Wood Top, Erringden;  
Crimsworth Dean.

**Carex flava**, L.—65.

Native. British type. P. June-July.

1867. Wet places in Shibden.—*J. Walker.*

The type *eu-flava* does not occur, but a variety is common  
in the cloughs and moorland pastures. By the older  
botanists it was called *Æderi*; Dr. Lees in his *Flora*  
refers it to *minor*; to Mr. C. E. Moss and myself the  
plant we have and the herbarium specimens appear to be  
*lepidocarpa*. In the absence of a description of the  
varieties enumerated in the last (9th) edition of the *London*  
*Catalogue*, the records of former workers are retained  
unchanged.

Var. *Æderi*, Ehrh.

1841. Wood Hey, Hebden Bridge.—*Herb. Gibson.*

1841. Ogden Clough; Cob Clough, Ripponden;  
Midgehole Clough, Hebden Bridge.—*Herb. S. King.*

Var. *minor*, Towns.

1888. Common in Upper Calder-dale.—*F. A. Lees.*

**Carex hirta**, L.—98.

Native. British type. P. June-July.

Rare, the only record is from a field at Copley, since 1892.

[**Carex Pseudo-cyperus**, L.—48.

Native. English type. P. July.

Near Halifax.—*S. Gibson; Herb. Tatham.* Not in *Gibson's*  
own herbarium, and no other record.]

**Carex acutiformis**, Ehrh.—77. (*C. paludosa*, Good.)

Native. British type. P. June-July.

1888. Common by the Calder canal and river from Tod-  
morden to Stanley.—*F. A. Lees.*

It is strange that it has not been seen either before or since,  
if it is common.

**Carex rostrata**, Stokes.—103. (*C. ampullacea*, Good.)

Native. British type. P. June-July.

1834-1843. Widdop.—*Herb. Leyland and Gibson.*

1888. Hebden Bridge, Rishworth moors.—*Lees' Flora.*

It is surprising that it has not been found recently.

**Carex vesicaria**, L.—79.

Native. British type. P. June-July.

1775. In a boggy place near Old House mill dam in Norland.—*J. Bolton,*

1838. At the old Cut, opposite Sterne Mill.—*Herb. Leyland.*

1842. Old Canal, Norland.—*Herb. S. King.*

1843. Near Halifax.—*S. Gibson; Herb. Tatham.*

Rare, about the canal: Tag Lock, Elland.

## GRAMINEÆ.

[*Panicum sanguinale*, L. Alien.

1847. On the side of the river at Hollings Mill, near Halifax.—*Herb Gibson.*]

[*Setaria viridis*, Beauv.—34.

Casual. A. July-August.

1846. Mytholmroyd.—*Herb. Gibson.*]

*Phalaris canariensis*, L. Canary Grass.

Alien. A. June-August.

1867. In a field near Akroydon.—*J. Walker.*

A frequent casual on waste ground near corn mills, or villages: Sterne Mills, Norland Clough, Stainland, Wheatley, Luddenden, &c.

**Phalaris arundinacea**, L.—110. Reed grass.

Native. British type. P. June-August.

1840. Dean House Wood, near Luddenden.—*Herb. S. King.*

1867. Margin of dam at Salterlee, in Shibden.—*J. Walker.*

Frequent, on stream, canal, and dam sides: Elland, Salterhebble, Norland, Stainland, Rishworth, Mytholmroyd, Hebden Bridge, &c.

**Anthoxanthum odoratum**, L.—111. Sweet Vernal grass.

Native. British type. P. May-June.

1844. Luddenden.—*S. King.*

1867. Shibden, very common.—*J.W.*

Very common in meadows and pastures,

**Alopecurus myosuroides**, Huds.—67. (*A. agrestis*, L.)

Colonist. English type. A. July-August.

1844. Luddenden Brook.—*Herb. S. King.*

Rare, in cultivated fields: near the Hollins, Warley; Sterne Mill.

**Alopecurus geniculatus**, L.—112. Jointed Foxtail.

Native. British type. P. June-July.

1844. Booth Dean.—*Herb. S.K.* 1844. Luddenden.—*S.K.*

1867. Near streams and wet places in Shibden.—*J. Walker.*

Common in pools and wet meadows.

**Alopecurus pratensis**, L.—105. Foxtail.

Native. British type. P. May-June.

1867. Meadows and pastures in Shibden.—*J. Walker.*

Very common in meadows.

**Milium effusum**, L.—88. Wood Millet.

Native. British type. P. June-July.

North Dean, Elland Wood, &c., common.—*Herb. Leyl.*

1839. Hebden Bridge; 1842. Midgley Scout.—*Herb. S.K.*

1888. Hebden Valley.—*F. A. Lees.*

Very common and abundant in all the woods, especially so in Elland Park Wood and North Dean Wood.

**Phleum pratense**, L.—108. Timothy, Cat's-tail.

Native, or Colonist. British type. P. June-July.

1867. Meadows and pastures in Shibden, not common.—*J.W.*

Infrequent in meadows, &c.

[**Agrostis canina**, L.—101.

Native? British type. P. June-August.

1832. Hangingroyd Mill, Hebden Bridge.—*Herb. Gibs.*

Rare, if it occurs at all; there is no recent record, but it might be found in moorland pastures.]

**Agrostis palustris**, Huds.—104 (*A. alba*, L.) Fiorin.

Native. British type. P. June-July.

Infrequent, in damp places in the cloughs: Copley, Elland, Hebden Bridge, and Bogden Clough, Rishworth.

**Agrostis vulgaris**, With.—112. Bent grass.

Native. British type. P. July-August.

1837. Ogden.—*Herb. Leyl.* 1844. Luddenden Brook.—*S.K.*

Very common in pastures, cloughs, and moor edges.

**[*Aira caryophyllea*, L.—110.**

Native? British type. A. June-July.

1840. Hebden Bridge.—*S. Gibson; Herb. S. King.*

Rare, no other record; like *Agrostis canina*, its presence requires confirmation.]

***Aira præcox*, L.—111. Early Hair grass.**

Native. British-type. A. May.

1840. Very common near Halifax.—*Baines' Flora.*

1867.—Dry and sandy places, Ogden.—*J. Walker.*

Infrequent in dry places, walls, and banks: Skircoat, Norland, Ogden, &c.

***Deschampsia cæspitosa*, Beaud.—111. Tufted Hair grass.**

Native. British type. P. June-August.

1840. Hirst Wood; Wadsworth Moor.—*Herb. Gibs.*

1844. Luddenden Brook.—*S. King.* 1867. Shibden.—*J.W.*

Common, on stream banks, dam sides, and moors.

***Deschampsia flexuosa*, Trin.—107. Wavy Hair grass.**

Native. British type. P. June-July.

Hirst Wood.—*Herb. Gibs.* 1867. Upper Shibden.—*J.W.*

Very common, with a wide range, from the banks of the canal to the tops of the moors, but chiefly on the damper moors as Langfield, Heptonstall, Widdop, and Walshaw.

***Holcus mollis*, L.—107. Creeping Soft grass.**

Native. British type. P. June-July.

1844. Luddenden Brook.—*S. King.* 1867. Shibden.—*J.W.*

Very common, and very abundant in woods and on banks, and more or less in pastures and meadows.

***Holcus lanatus*, L.—111. Yorkshire Fog.**

Native. British type. P. June-July.

Crownest Wood, Hebden Bridge.—*Herb. Gibs.*

1844. Luddenden Brook.—*S.K.* 1867. Shibden.—*J. Walker.*

Very common, in meadows, pastures, banks, &c.

***Trisetum pratense*, Pers.—93 (*T. flavescens*, Beauv.)**

Native. British type. P. July.

1845. Winterburn Hill, Warley.—*Herb. S. King.*

Salterhebble.—*Herb. Leyland.* 1867. Shibden.—*J.W.*

Rare, in dry pastures: Hebden Bridge.

***Avena pubescens*, Huds.—91. Downy Oat grass.**



Casual. British type. P. June-July.

Rare, in waste ground: Wheatley (1895).

[*Avena pratensis*, L.—76.

Casual. British type. P. June-July.

Near Halifax.—*Herb. Leyland*.

No other record, and like the preceding it is not likely to be more than a casual here, in the absence of limestone soil.]

[*Avena strigosa*, Schreb. Alien. A. June-July.

1840. Hebden Bridge.—*S. Gibson; Herb. Tatham*.]

*Avena fatua*, L.—77. Wild Oat grass.

Casual. British type. A. June-July.

1843. Near the Hollins, Warley.—*Herb. S.K.*

Sterne Mill.—*Herb. Gibs*.

Occasionally about corn mills, &c.: Elland (1896). The whole genus seems to be foreign to the native flora of the parish.

**Arrhenatherum avenaceum**, Beauv.—112

Native. British type. P. June-July.

Lee Wood.—*Herb. Gibson*. 1867. Shibden.—*J. Walker*.

Common in hedgerows, banks, pastures, &c.

Var. **nodosum**, Reichb.

Crownest Wood.—*Herb. Gibson*.

1867. Hedges and thickets, common.—*J. Walker*.

**Sieglingia decumbens**, Bernh.—108. (*Triodia decumbens*)

Native. British type. P. July-August. [Heath grass.

1837. Halifax.—*J. Sutcliffe; Herb. Tatham*.

1888. Todmorden.—*A. Stansfield; Lees' Flora*.

Frequent in moorland pastures: Ogden, Luddenden Dean, Rishworth, Cragg Vale, Crimsworth Dean, &c.

**Phragmites communis**, Trin.—104. Reed grass.

Native. British type. P. July-August.

Rare, in lowland ditches: Copley (1890).

**Cynosurus cristatus**, L.—112. Dog's-tail.

Native. British type. P. June-July.

1867. Meadows and pastures in Shibden, common.—*J.W.*

Very common in meadows, pastures, and banks.

[*Cynosurus echinatus*, L. Casual. A.

1843. Sowerby Bridge and Ashgrove.—*Herb. Gibs*.

1862. Cornfield near Brighouse.—*T. Barnes; Miall's Flora.*]

**Molinia varia**, Schr.—108 (*M. cœrulea*, Mœench.) Blue  
Native. British type. P. June-August. [Moor grass.  
Norland Moor, very common.—*Herb. Leyland.*

1841. Midgley Moor.—*Herb. S. K.* Wadsworth Moor.

1867. North Dean and Norland.—*J. Walker.* [*Herb. Gibs.*  
Very common on the moors, and occasional patches in the  
valley bottoms, where it has been washed down.

Var. **depauperata**, Lindl.

Frequent: Rishworth, Hardcastle Crag.

**Melica nutans**, L.—49.

Native. Scottish type. P. June.

1834. In the Eaves at Heptonstall.—*Herb. Leyland.*

1842. Eaves near Heptonstall.—*Herb. S. King.*

1862. Eaves near Heptonstall.—*C. Eastwood; Miall's Flora.*

1888. Eaves Wood.—*A. Stansfield and F. A. Lees.*

Sought, but not found recently.

**Melica uniflora**, Retz.—96. Wood Melic.

Native. British type. P. June-July.

1867. Woods in Shibden, very common.—*J. Walker.*

Frequent in woods, from Elland Park and Sun Wood to  
Stannelly Clough; common in the west.

**Dactylis glomerata**, L.—112. Cock's-foot.

Native. British type. P. June-July.

1844. Luddenden Brook.—*S. King.* 1867. Shibden.—*J. W.*

Very common, in meadows, pastures, banks, &c.

**Briza media**, L.—108. Quaking grass.

Native. British type. P. June-July.

1846. Roebuck's farm, near Luddenden.—*Herb. S. King.*

1867. Old fields near the Hazlehurst, at Upper Shibden;  
near Hipperholme; and about High Road Well, above  
Halifax.—*J. W.*

Frequent, chiefly in moorland pastures: Lightcliffe, Mixen-  
den, Castle Carr, Erringden, Hardcastle Crag, &c.

**Poa annua**, L.—111. Annual Meadow grass.

Native. British type. A. April-October.

1840. High Green Wood.—*Herb. Gibs.*

1844. Luddenden.—*S. King.* [*J. Walker.*

1867. Roadsides and waste places, Shibden, very common.

Very common on bare ground, new soil, walls, roadsides, &c., ascending to 1250 ft.

**Poa pratensis**, L.—110. Smooth Meadow grass.

Native. British type. P. June-July.

1843. Crownest Wood.—*Herb. Gibs.* 1867. Shibden.—*J.W.*

Very common, in meadows, banks, &c.

Var. **subcœrulea**, Sm. (*P. humilis*.)

1827. Heptonstall Eavs and many other places in this district.—*Herb. Leyland.*

1840. Hills near Halifax, Heptonstall, &c., frequent.—*Baines' Flora.*

**Poa trivialis**, L.—110. Rough Meadow grass.

Native. British type. P. June-July.

1844. Near Calder and Hebble; near Hebden Bridge, very common.—*Herb. Gibs.*

1844. Luddenden Brook.—*Herb. S. King.*

1867. Moist and shady places in Shibden.—*J. Walker.*

Infrequent, in damp meadows and woods: Copley, Hebden Bridge, &c.

Var. **Kœleri**, DC.

1899. Norland Clough.

Var. **parviflora**, Parn.

1840. Lee Wood, Hebden Bridge.—*Herb. Gibson.*

**Glyceria fluitans**, R. Br.—110. Floating Sweet grass.

Native. British type. P. June-July.

1867. Borders of the dam at Salterlee in Shibden.—*J.W.*

Very common on the margin of pools, ditches, dams, and reservoirs, from Tag Lock to Widdop.

**Glyceria aquatica**, Sm.—79. Reed Sweet grass.

Native. English type. P. July.

1841. Canal between Luddenden Foot and Sowerby Bridge.—*Herb. S. King.*

1867. Plentiful in the canal above Salterhebble.—*J.W.*

1888. Todmorden, by the canal.—*A. Stansfield; Lees' Flora.*

Very abundant along the whole length of the canal; also on the Calder banks.

[*Festuca Myuros*, L.—52.

Casual. English type. A. July.

1837. Broadbottom.—*Herb. S. King and Gibson.*

1862. Broadbottom, Mytholmroyd.—*C. Eastwood; Miall's Fl.*]

[*Festuca sciuroides*, Roth.—104. (*F. bromoides*, Sm.)

Casual. British type. A. July.

1835. Skircoat Moor.—*Herb. Leyland.*

1844.—Luddenden Brook.—*Herb. S. K.*]

**Festuca ovina**, L.—111. Sheep's Fescue.

Native. British type. P. June-July.

1842. Var. *tenuifolia*, Hebden Bridge.—*Herb. Gibson.*

1844. Luddenden Brook.—*S. King.*

1867. Shibden and Ogden.—*J.W.*

Very common in pastures and on moor edges, and especially on grassy moors (var. *tenuifolia*, Sibth.), like Langfield, on shales and clayey soils.

**Festuca rubra**, L.—100. (*F. duriuscula*, "Linn." Sm.)

Native. British type. P. June-July.

Well Head.—*Herb. Leyl.* 1844. Luddenden.—*S. King.*

Common in meadows and sandy lanes.

**Festuca sylvatica**, Vill.—30. Wood Fescue.

Native. Scottish type. P. June-July.

1833. Lee Mill Scar, near Hebden Bridge; 1837. Stanley Clough, near Todmorden.—*Herb. Leyl.*

1840. In the Eaves at Heptonstall; Stanley Clough.—*Baines' Fl.* Hirst Wood.—*Herb. Gibs.*

1842. Nut Clough, near Hebden Bridge.—*Herb. S. King.*

1888. Stanelly Clough.—*A. Stansfield; Lees' Fl.*

Rare, in wooded cloughs: High Green Wood, Heptonstall (*H. T. Soppitt*, 1895); sparingly on shale in Norland Clough (*H.T.S.*, 1897); also on shale in Nut Clough and Stanelly Clough.

**Festuca elatior**, L.—95. Tall Fescue.

Native. British type. P. June-July.

Infrequent or unnoticed, both the type and varieties.

Var. **pratensis**, Huds. Meadow Fescue.

1832. Canal bank, near Mytholmroyd.—*Herb. Gibs.*  
Savile Green.—*Herb. Leyland.*

1846. Roebuck's Farm, Luddenden.—*Herb. S.K.*

1867. In rather moist meadows and pastures, Shibden.—*J.W.*

× **Lolium perenne.** (F. loliacea, Curt.)

1840. Halifax.—*Baines' Flora.*

1867. In rich moist meadows and pastures.—*J.W.*

**Bromus giganteus**, L.—98. Wood Brome.

Native. British type. P. July-August.

Hirst Wood.—*Herb. Gibs.* 1844. Luddenden.—*S. King.*

1867. Shibden.—*J.W.* 1888. Hebden Bridge.—*F.A. Lees.*

Frequent in woods: Elland Park Wood, Norland Clough, Cragg Vale, Hardcastle Craggs, &c.

**Bromus ramosus**, Huds.—96. (B. asper, Murr.)

Native. British type. A or P. June-July.

Hirst Wood, Hebden Bridge.—*Herb. Gibson.*

1842. Spawholme, near Luddenden.—*Herb. S. King.*

1867. Moist woods and hedges in Shibden.—*J. Walker.*

Common, in moist woods.

[*Bromus erectus*, Huds.—49

Casual. English type. P. June.

1836. Hebden Bridge.—*J. Sutcliffe; Herb. Tatham.*]

*Bromus tectorum*, L. Alien.

1895. On waste ground, on corn-mill refuse, Elland.

**Bromus sterilis**, L.—108. Barren Brome.

Native. British type. A. June-July.

By the roadside at Elland.—*Herb. Leyl.*

Sterne Mill.—*Herb. Gibs.*

Rare, by roadsides at low levels: Elland.

**Bromus secalinus**, L.—80.

Colonist, or Casual. English type. A. June-August.

1842. Todmorden.—*S. Gibson; Herb. Tatham.*

1843. Var. *stricta*, between Brighouse and Sowerby Bridge.—*S. Gibson; Phytologist.*

1892. Near Elland Park Wood.

Var. *velutinus*, Schrad.

Hebden Bridge.—*S. Gibson; Herb. S. K.*

*Bromus commutatus*, Schrad.—92.

Casual. British type. A or B. June-August.

1841. Hangingroyd Mill, near Hebden Bridge.—*Herb. Gibson,*

1844. Luddenden Brook damstones.—*Herb. S. King.*

Apparently only a casual in upper Calder dale: King's gatherings in 1844 include a number of corn mill waifs and Gibson's record seems to be of the same class.

**Bromus mollis**, L.—112. Soft Brome.

Native. British type. A or B. June-July.

1844. Luddenden Brook.—*S. King.*

1867. In meadows, pastures, and waste ground.—*J. Walker.*  
Common in meadows, waste ground, &c.

*Bromus arvensis*, L. Casual.

1841. Hebden Bridge.—*S. Gibson; Herb. S. King.*

1842. Hangingroyd Mill; canal bank, Sowerby Bridge;  
1843. Sterne Mill.—*Herb. Gibson.*

Occasionally about corn mills: Sterne Mill (1897).

**Brachypodium gracile**, Beauv.—111. (*B. sylvaticum*, R & S.)

Native. British type. P. June-July.

1840. Very common about Luddenden.—*Herb. S. King.*

1842. Hebden Bridge.—*S. Gibson; Herb. Tatham.*

1867. Woods and hedges in Shibden.—*J. Walker.*

Infrequent, on dry roadsides near woods: Elland, Salter-hebble, Luddenden Foot, &c.

[*Brachypodium pinnatum*, Beauv.—37.

Alien. English type. P. July.

1840. Broadbottom, Mytholmroyd.—*S. Gibson; Herb. S.K.]*

**Lolium perenne**, L.—112. Perennial Rye grass.

Native. British type. P. June-July.

1844. Luddenden.—*Herb. S. King.* 1867. Shibden.—*J.W.*

Very common, in pastures and waysides.

Var. *multiflorum*, Lam. Casual.

1843. Hebden Bridge.—*Herb. Gibs.*

1843. Near Sowerby Bridge.—*S. Gibs.; Phytologist.*

1844. Luddenden Brook.—*Herb. S. King.*

1867. Holywell Green, near Elland.—*J. Walker.*

Var. *italicum*, Braun. Casual.

1898. On refuse by the Lodge, Hardcastle Crags.

**Lolium temulentum**, L.—64. Darnel.

Colonist. British type. A. June-August.

1843. Near Sowerby Bridge.—*S. Gibson*; *Phytologist*.  
 1844. Luddenden Brook damstones.—*Herb. S. King*.  
 1888. Greetland.—*W. West*; *Lees' Flora*.  
 Rare, in cultivated ground, and a casual about corn mills.  
 Var. *arvense*, With.

1843. Near Sowerby Bridge.—*S. Gibson*; *Phytologist*.  
 Hangingroyd Mill.—*Herb. Gibs*.  
 1844. Luddenden Brook.—*Herb. S. King*.

**Agropyron caninum**, Beauv.—90.

- Native. British type. P. June-July.  
 1867. At Woodlands, near Akroydon.—*J. Walker*.  
 Infrequent, in woods, &c.: Skircoat, Norland Clough.

**Agropyron repens**, Beauv.—111. Couch grass.

- Native. British type. P. June-July.  
 1844. Luddenden Brook.—*S. King*; *Phytologist*.  
 1867. At Woodlands, near Akroydon.—*J. Walker*.  
 Common, in cultivated fields and waste ground.

**Nardus stricta**, L.—107. Mat grass.

- Native. British type. P. July.  
 Norland Moor.—*Herb. Leyland*. Wadsworth.—*Herb. Gibs*.  
 1867. Upper Shibden and Ogden.—*J. Walker*.  
 Very common in moorland pastures and on grassy moors.

**Hordeum sylvaticum**, Huds.—27. Wood Barley.

- Native. English type. P. July-August.  
 1833. Stanley Clough, near Todmorden; and Lee Mill  
 Scar, near Hebden Bridge.—*Herb. Leyland*.  
 Stanley neys (= Hartley Naze).—*Herb. Gibson*.  
 1840. Heptonstall Eaves; Stanley Clough.—*Baines' Fl*.  
 Very rare, in woods: Sun Wood, near Lightcliffe (1899);  
 probably still in Stanelly Clough.

*Hordeum secalinum*, Schreb.—62. (*H. pratense*, Huds.)

- Casual. English type. P. June-July.  
 1895. On waste ground, Dapper Mill, Wheatley.

*Hordeum murinum*, L.—78.

- Casual. English type. A. July-August.  
 Occasionally on waste ground: Sterne Mill (1890); Dapper  
 Mill, Wheatley (1892).



## FILICES.

**Hymenophyllum tunbridgense**, Sm.—28. Filmy Fern.

Native. Atlantic type. P. June-July.

1835. Found on Langfield Moor, near to Studley Pike by John Howarth, of Lob Mill; 1837. Rake Hey Common, near Todmorden.—*Herb. Leyl.*

1844. Near Halifax.—*W. Wilson, Phytologist*, i. 453.

1854. Mr. Wilson has found it near Halifax, . . . and the late Mr. Gibson, near Todmorden.—*Newman, Brit. Ferns.*

No recent record of it, but as the exact localities are unknown, and Rake Hey or Langfield has been but little examined, and not at all for this fern, it may be still existing.

**Hymenophyllum unilaterale**, Bory.—47. Filmy Fern.

Native. Atlantic type. P. June-July.

1834. Turner Clough.—*Herb. Leyland.*

1838. Turner Clough.—*S. Gibson.*

Records by Baines, Wilson, Newman and Watson, in some cases authenticated by specimens, refer to the same locality, but it does not appear to have been found there for the last quarter or even half century. Still the locality is by no means deteriorated botanically, except at one end, and it is not at all unlikely that a careful investigation might reveal either one or both of the filmy ferns existing there.

**Pteris aquilina**, L.—112. Bracken, Brakes.

Native. British type. P. July-September.

1785. About the skirts of barren moors.—*J. B., Fil. Brit.*

1862. Varieties on hills about Todmorden.—*A. Stansfield, Miall's Flora.*

1867. Shibden and Ogden, common.—*J. Walker.*

Very common, in woods, moorland cloughs and slopes, ascending to 1200 feet.

**Cryptogramme crispa**, R. Br.—58. Parsley Fern.

Native. Highland type. P. July-August.

1775. In a wall above Heptonstall, on the right-hand side of the road, going from the town toward Cross-hill; two or three small plants in a wall on the right-hand going from Newland to the Farther Clough-head in Warley.—*J. Bolton.*

1862. Knott's Wood, near Todmorden; Bents' Pastures, (in Stansfield); near Heptonstall.—*T. Stansfield; Miall's Fl.*

1888. Near Todmorden, (*A. Stansfield*); head of Hebden Valley.—*Lees' Flora*.

Said to be extinct in S.W. Yorks., in *Top. Bot.*, probably on the authority of Leyland; but, though it has been extinct at Heptonstall for about thirty years, Mr. Needham states that it was twice seen in 1898, in one of the cloughs of the upper Hebden—and left.

**Lomaria Spicant**, Desv.—111. (*Blechnum boreale*, Sw.)

Native. British type. P. July-August. [Hard Fern.

1785. In Birks Wood, near Halifax, abundantly.—*J. Bolton, Fil. Brit.* Near Halifax.—*Herb. Leyland*.

1840. Abundantly.—*Herb. S. King*.

1862. Seventeen varieties, or sports, from Mytholmroyd, Stansfield and Todmorden are enumerated by *A.* and *T. Stansfield* in *Miall's Flora*.

1867. Shibden; very abundant in the Ogden cloughs.—*J. Walker*.

Common, in most, or all, of the moorland cloughs, as Ogden and Widdop, on the rocky moor edges and stream sides; now rare near the towns or below 700 feet, though it is found at the bottom of Norland Clough (250 feet).

**Asplenium Adiantum-nigrum**, L.—107. Black Spleenwort.

Native. British type. P. July-September.

On old walls near Willow Hall, on the Burnley Road.—*Herb. Leyland*.

1840. Ive House Lane, Warley.—*Herb. S. King*.

1862. Wadsworth Banks, Ive House Clough, and turnpike between Cote Hill and Luddenden Foot.—*C. Eastwood; Miall's Flora*. [J. Walker.

1867. Old walls on the Burnley Road, very sparingly.—

1888. Near Mount Skip, Hebden Bridge; and Scout, Hareley Wood.—*T. Stansfield; Lees' Flora*.

Gone from the Burnley Road, and not reported in recent years from any locality, except Heptonstall Eaves, where Mr. J. Needham found a single plant in 1896, on a wall on which it was formerly more abundant.

[**Asplenium viride**, Huds.—41. Green Spleenwort.

Native, extinct. Highland type. P. July-September.

1775. Towards the top of Ogden Clough, along with the Black (Spleenwort).—*J. Bolton*.

1785. From the chinks of moist rocks, beside the Clough below the Great Rock, called Ogden Kirk.—*J. Bolton*; *Fil. Brit.* 1841. Ogden Clough.—*Herb. S.K.*

1862. Ogden Clough.—*C. Eastwood.*

1867. Near the great rock in Ogden Clough, one plant was observed in 1866.—*J. Walker.*

1888. Hardcastle Crag.—*Lees' Flora.*

Now extinct at Ogden, also in the Hebden Valley, where it formerly grew below Ladyroyd (*J. Needham*).]

**Asplenium Trichomanes**, L.—108. Black, or Maiden-hair Spleenwort.

Native. British type. P. July-September.

1775. In a dripping shady place in Soyland Mill Clough, just by the Pitcher Pit, a little above Kebroyd Mill; in many such like places about Hepton-bridge; and about the sides of Ogden Clough, towards the top.—*J. Bolton.*

1785. On rocks about Ogden Kirk; on the moist rocks near the Pitcher Pit, in Soyland Mill Clough, and other places in the neighbourhood of Halifax.—*J. Bolton*; *Fil. Brit.*

Burnt-brow Clough, in Shibden, and other shady woods.—*Herb. Leyland.*

1862. Cragg Vale, Todmorden.—*C. Eastwood*; *Miall's Flora.*

1888. Still high up the Hebden Valley.—*F. A. Lees.*

Much rarer now than in Bolton's day, but known to Mr. J. Needham in several places in the Hebden Valley; also at Heptonstall Eaves, and near Pecket Well.

**Asplenium Ruta-muraria**, L.—109. Wall Rue.

Native. British type. P. July-September.

1775. Out of the walls of Sowerby Bridge, in plenty.—*J. Bolton.*

1785. On rocks in the Eves near Heptonstall; on Sowerby Bridge.—*J. Bolton*; *Fil. Brit.*

1820. Making Place, Soyland.—*Herb. Leyland.*

1841. Soyland Town.—*Herb. S. King.*

1845. "Wall Penny Royal" grows near Washer Lane, and Rough Hay, near Triangle.—*Med. Bot. Soc.*

1867. On the bridge at Elland.—*J. Walker.*

Rare: still at Heptonstall Eaves; now for many years on the high wall of the Shay in Hunger Hill, Halifax; garden wall, Brearley Hall; brick wall near Stocks Hall, Mytholmroyd (*J. Needham*), and probably one or two other places.

**Athyrium Filix-fœmina**, Roth.—110. Lady Fern.

Native. British type. P. July-September.

1785. In rocky moist places, beside Lee Beck, near Halifax, plentifully.—*J. Bolton; Fil. Brit.*

1844. Mill House Clough, Luddenden.—*Herb S. King.*

1862. A score of varieties or sports from Todmorden, Hebden Bridge, &c., are named, principally by *A. & T. Stansfield* in *Miall's Flora*.

1867. Shibden, common.—*J. Walker.*

Very common and abundant in the woods and cloughs. Lees says that "hardly a tithe of the type-forms once existing in the Calder Valley cloughs, are now to be found." But there are forms enough still, about Hebden Bridge, if anyone thought it worth while to distinguish them. In addition to those named below, *fissidens*, Moore, *Foxtoni*, Lowe, and *ovatum*, have been noted there recently, by the Hebden Bridge botanists, *J. Needham* and *H. Pickles*.

Var. **rhæticum**, Roth.

1862. Vale of Todmorden (*T. Stansfield*); Hebden Bridge; Halifax.—*Miall's Flora*.

1888. Todmorden.—*A. Stansfield* and *F. A. Lees*. Pecket Wood, &c., about Hebden Bridge.

Var. **molle**, Roth.

1862. Hebden Bridge.—*S. Gibson; Miall's Flora*. Frequent about Hebden Bridge: Crimsworth Dean, Pecket Wood, High Greenwood, &c.

Var. **incisum**, Hoffm.

1862. Todmorden.—*A. Stansfield; Miall's Flora*. Rare, in the Hebden Valley.

**Scolopendrium vulgare**, Sym.—101. Hart's-tongue.

Native. British type. P. July-August.

1775. In Toad-holes in Sowerby; Warley Clough, towards the top; in Beestones, near Rastrick.—*J. Bolton*.

1785. In a little woody brow, called Toad Holes, in Sowerby

- Dean, four miles from Halifax.—*J. Bolton ; Fil. Brit.*  
 1837. Burnt-brow Clough, in Shibden.—*Herb. Leyland.*  
 1840-2 Midgley Scout ; var. *crispum*, Daisy Bank Wood, Warley ; var. *multifidum*, Daisy Bank Wood, and in the clough above Broadbottom, in Wadsworth.—*Herb. S.K.*  
 1867. Upper Shibden, rather sparingly, and very fine on a scar at Mytholm, near Hipperholme.—*J. Walker.*  
 Nearly exterminated, but still at several places about Hebden Bridge (Mr. Needham has found it in four localities within the last five years) ; and said to remain near Elland.

**Cystopteris fragilis**, Bernh.—82. Bladder Fern.

- Native. British type. P. July-August.  
 Burnt-brow Clough, in Shibden Dale.—*Herb. Leyland.*  
 1840. In a deep clough at the head of Shibden dale, very sparingly.—*Baines' Flora.*  
 1862. Shibden ; Norland ; near Hebden Bridge (*L. Miall*)—*Miall's Flora.*  
 1867. Very sparingly on the left side of one of the streams in Upper Shibden.—*J. Walker.*  
 1888. Horsebridge Clough ; and a bridge at the top of Hebden Valley (= Blakedean)—*T. Stansfield ; Lees' Flora.*  
 Rare, upon rocks and old walls near Hebden Bridge : Walshaw ; Blakedean ; High Greenwood ; Crimsworth Dean (= Horse-bridge Clough) ; and on a canal bridge east of Hebden Bridge (*J. Needham*).

Var. **dentata**, Hook.

1862. Green's Clough, near Todmorden.—*T. Stansfield ; Miall's Flora.*

**Polystichum lobatum**, Presl.—104. (Aspidium) Shield Fern.

- Native. British type. P. July-August.  
 Near Hebden Bridge (*S. Gibson*) ; Toad Holes Wood, near Triangle in Sowerby.—*Herb. Leyland.*  
 1832. Near Sowerby Dean ; 1840, Luddenden.—*Herb. S.K.*  
 1840. Halifax, Heptonstall, Todmorden, &c.—*Baines' Fl.*  
 1862. Frequent in woods at Luddenden (*C. Eastwood*) ; Shibden Valley (*L. Miall*).—*Miall's Flora.*  
 1867. Upper Shibden.—*J. Walker.*  
 Very rare, in woods ; Crimsworth Dean ; Hebden Valley.

Var. **aculeatum**, Syme.

1785. On rocks near the bottom of Binroyd Clough,

Norland; and in a little wood called Toad Holes, in Sowerby Dean.—*J. Bolton; Fil. Brit.*  
Burnt-brow Clough in Shibden, &c.—*Herb. Leyl.*

1840. Near Ripponden; Broadbottom, Wadsworth.—*Herb. S.K.*

1867. Very fine in a deep clough at Upper Shibden.—*J.W.*

Very rare, in woods and cloughs: Ogden, Crimsworth Dean, Hardcastle Crags.

**Polystichum angulare**, Presl.—63. (Aspidium). Shield Fern. Native. English type. P. July-August.

1840. Mill House Clough, Luddenden; Midgley Scout; Shibden.—*Herb. S.K.* Beestones.—*Herb. Leyland.*

1840. Near Elland; Beestones Wood (*W. Lord*); plentiful at top of Shibden dale; Luddenden (*S. King*)—*Miall's Fl.*

1862.—Nurserymen's varieties from Shibden and Beestones Wood, Stainland, named by *T. Stansfield* in *Miall's Fl.*

1867. In the same locality as *P. aculeatum*, where many interesting forms may be met with.—*J. Walker.*

Very rare, in woods: Crimsworth Dean, nearly exterminated. (*J. Needham*). To a careless observer, the Halifax cloughs may seem to be as rich in ferns as they ever could have been, but the irresistible propensity to lift a fern, if it has a marketable value, has played havoc in their ranks. Each page tells the same tale—the nurserymen's favourites are now all but exterminated. Nor can botanical societies be altogether exonerated.

[*Lastræa Thelypteris*, Presl.—43. Error.

Bolton's *Acrostichum thelypteris* of 1775, and *Polypodium thelypteris* of 1785 are the next species (q.v.) as Newman pointed out:—"Bolton made a somewhat similar mistake by figuring *Lastræa Oreopteris* in its stead ('Fil.' tab. 22); but this he subsequently rectified by repeating the species under its proper name (*Id.* tab. 43)"—*Brit. Ferns*, 124. In addition to the erroneous figure of *L. Thelypteris* in "English Botany," mentioned by Newman, S. Goodenough, the botanical Bishop of Carlisle, fell into exactly the same mistake as Bolton. In a letter of his in the "Memoir of Sir J. E. Smith" (Vol. I, p. 540) he writes:—"I always thought we found *P. Thelypteris* near Bury; but by your list that is *Oreopteris*."] ]

**Lastræa Oreopteris**, Presl.—102. Sweet Mountain Fern.

Native. British type. P. July-August.

1775. *A. thelypteris* in Warley Clough, just at the back of the Gigg-mill.—*J. Bolton*.

1785. *P. thelypteris*, at the bottom of a little wood near the rivulet, directly below the cottages in Birks Lane, half a mile from Halifax; in the top of a corn field under North Dean Wood, Norland; and about Cob Clough, Ripponden, plentifully.—*J. Bolton; Fil. Brit.*

North Dean and other woods, frequent.—*Herb. Leyland*.

1840. Lane House Farm, Luddenden.—*Herb. S. King*.

1867. Upper Shibden and Ogden, common.—*J. Walker*.

1888. Above Derby Inn, Rishworth.—*F. A. Lees*.

Common, in damp woods, field banks, stream sides and cloughs; numerous records from localities in the west; but rare in the east, Wheatley, Coley Beck, Ogden

**Lastræa Filix-mas**, Presl.—112. Male Fern.

Native. British type. P. July-August.

1785. About the borders of woods, near rivulets, and in stony and rocky places about Halifax, abundantly.—*J. Bolton, Fil. Brit.* 1844. Luddenden Brook.—*S. King*.

1862. Several varieties about Todmorden.—*T. Stansfield; Miall's Fl.*

1867. Very common throughout the parish.—*J. W.*

Very common, in woods, moist banks, and by stream and dam sides, throughout the parish.

Var. **affinis**, Bab. (*incisa*, Newm.)

1862. Vale of Todmorden (*T. Stansfield*); Shibden (*L. Miall*); Luddenden (*C. Eastwood*).—*Miall's Fl.*

Var. **paleacea**, Moore.

1862. Todmorden, plentiful.—*T. Stansfield; Miall's Pecket Wood, Hebden Bridge, &c.* [*Fl.*

**Lastræa spinulosa**, Presl.—83.

Native. British type. P. July-August.

Rare, in damp woods: Pecket Wood and Hardcastle Crag, (*J. Needham*); Ainley Wood, (*T. Halstead*). No record before 1892.

**Lastræa dilatata**, Presl.—77. Buckler Fern.

Native. British type. P. July-August.



1785. *Polypodium cristatum*, from the chinks of moist rocks and old walls, in steep and craggy woods, everywhere in the Parish of Halifax, particularly in Birks Wood and Lee Bank, Shroggs, abundantly.—*J. Bolton; Fil. Brit.*

Woods near Halifax, frequent.—*Herb. Leyland.*

1840. Very common about Luddenden.—*Herb. S. King.*

1862. Varieties from Todmorden named by *A. & T. Stansfield* in *Miall's Fl.*

1867. Common in Shibden, and throughout the Parish.—*J. Walker.*

Very common, in moist woods, cloughs, &c.

Var. **dumetorum**, Moore.

1862. Vale of Todmorden, plentiful.—*T. Stansfield.*

Var. **collina**, Bab.

1862. Hills about Todmorden, frequent.—*A. Stansfield; Miall's Flora.*

[**Lastræa æmula**, Brack.—34.

Native? Atlantic type. P. July-August.

1862. *L. dilatata*, var *fæniseccii*, wood between Luddenden and Luddenden Foot.—*C. Eastwood; Miall's Flora.*

Not improbable, but requires confirmation.]

**Polypodium vulgare**, L.—112. Polypody.

Native. British type. P. July-September.

Birks Lane, &c., frequent.—*Herb. Leyland.*

Beestones Wood.—*Herb. S. King.*

1867. Shibden, Luddenden, and the valleys near Hebden Bridge, common.—*J. Walker.*

Rare now and decreasing, on old walls, but not found on old tree trunks, as often elsewhere: Cat-i-'th' Well, Luddenden; near the Derby, Rishworth; Gibson's mill, Hardcastle Crags; Pecket Wood, Hebden Bridge; Strines, Stansfield.

**Phegopteris Dryopteris**, Fée.—73. (*Polypodium Dryopteris*, L). Oak Fern.

Native. Scottish type. P. July-August.

1775. In Northdean in Greetland; in a lane going from Bairstow toward Upper Willow Hall in Skircoat, in the wall upon the right side as you go.—*J. Bolton.*

1785. In Birks Wood, North Dean Wood, Puttin Park and other woods in the neighbourhood of Halifax, plentifully.—*J.B., Fil. Brit.*

North Dean, &c., frequent.—*Herb. Leyland.*

1840. Luddenden Dean.—*Herb. S. King.*

1862. Hebden Bridge; Halifax; common about Luddenden (*C. Eastwood*); damp woods around Todmorden, moderately common (*T. Stansfield*).—*Miall's Flora.*

1867. Shibden and North Dean, common.—*J. Walker.*

1888. Hebden Bridge.—*F. A. Lees.*

Now rare and decreasing, in damp woods and wet rocky places in the cloughs: North Dean Wood, Barkisland, Ogden, Crimsworth Dean, and Greave Clough, near Widdop. Gone from Skircoat, Birks Wood and Shibden.

**Phegopteris polypodioides**, Fée.—76. (*Polypodium Phegopteris*, L.) Beech Fern.

Native. Scottish type. P. June-August.

1775. In Northdean in Greetland; in Allen's Wood in Norland; in Dixon-scar in Sowerby; and in Bankhouse Wood and Woodhouse Wood, both in Skircoat.—*J.B.*

1785. In a little wood in Soyland, just by the brook below Kebroyd Mill, plentifully; and in a little shadowy range of wood ground near the brook above Oldhouse Mill, Norland.—*J. Bolton; Fil. Brit.*

Burnt-brow Clough in Shibden, and other rocky woods.—*Herb. Leyland.*

1840. Deep Clough, Luddenden Dean.—*Herb. S. King.*

1840. Shibden Dale, Ogden Clough, &c., Halifax; rocky woods in the vale of Todmorden, frequent.—*Baines' Fl.*

1862. Booth Wood, near Luddenden (*C. Eastwood*); Fixby (*Hudd. Nat. Hist.*); hills near Hebden Bridge (*L. Miall*); Hareley Wood and other places near Todmorden (*T. Stansfield*).—*Miall's Flora.*

1867. Upper Shibden, common.—*J. Walker.*

Now rare and decreasing, in damp woods and wet stony places in the cloughs: Ogden Clough, Upper Shibden, Rishworth, Crimsworth Dean, and Greave Clough, near Widdop. A sack of roots, dug up from one locality, was sold only a few years ago.

**Osmunda regalis**, L.—89. Royal Fern. "Flowering Fern."

Native. British type. P. July-August.

1775. In plenty in a boggy place near Mixenden Mill; also in two or three places in Hethershef Scout in Sowerby; a few roots in Mossleden pasture; and a clump in a field in Bentley's royd in Sowerby.—*J. Bolton.*

1785. In a little bog, in a field under Haddershelf Scout, in Sowerby; in a field near Mixenden Mill, and some other places in the Parish of Halifax.—*J. Bolton; Fil. Brit.*
1841. Garden spcm. from a root brought from Barkisland.—*Herb. S. K.*
1862. Below Dean Head, Barkisland.—*S. King; Miall's Fl.*
1888. Bellmoor, Todmorden, nearly extinct.—*T. Stansfield; Lees' Fl.*

Very rare: but not yet extinct in the parish, and the only station, in the Hebden Valley, is fortunately in private grounds, where the fern is jealously guarded, and one or two poachers have had to restore their plunder, (*J. Needham.*) Additional localities where it formerly grew are Luddenden Dean and Hollock Lea, Erringden.

**Ophioglossum vulgatum**, L.—87. Adder's-tongue.

Native. British type. P. May-July.

1775. In dry pastures about the Beacon Hill, near Halifax; in the park at Howroyd in Barkisland; in plenty in all the Longfields at Steps in Warley; and in some pastures about Rastrick.—*J. Bolton.*
1785. In cold meadows and pastures, where the ground is moist, in the neighbourhood of Halifax; particularly in a meadow adjoining to Mytham Bridge, a mile from Halifax, in the way to Wakefield.—*J. Bolton; Fil. Brit.*
- Fields near Halifax, frequent.—*Herb. Leyland.*
1862. Ive House Clough, Luddenden (*C. Eastwood*); moist meadows about Todmorden, abundant (*T. Stansfield*)—*Miall's Flora.* 1867. Shibden, abundant.—*J.W.*
1879. Luddenden Dean.—*Y.N.U., Lees' Flora.*

Frequent, in meadows and pastures: Paddock, Shibden; Blackley Lane; Hunter Hill, Mixenden; field bordering Elland Park Wood; Luddenden Dean; Rishworth; Hollock Lea, Cragg Vale; Broadbottom, Wadsworth; Rake Head, Erringden; Crimsworth Dean, &c.

**Botrychium Lunaria**, Sw.—103. Moonwort.

Native. British type. P. June-July.

1775. Upon that side of Skircoat Moor towards Halifax in several places, and in most of the pastures adjoining; in several fields above Cytlin Clough, toward Warley Moor; in many pastures about Mount Pellon, and in many of the hilly places about Halifax.—*J. Bolton.*

1785. In pastures about Cold Edge, in Mixenden; in a small croft close by the house at Ball Green, Sowerby; in the fields near Holy Green, Northowram; and some other places in the neighbourhood of Halifax.—*J. Bolton; Fil. Brit.*
1836. Stansfield Moor; Shibden Dale, and many other places about Halifax.—*Herb. Leyland.*
1862. Castle Carr, near Luddenden (*C. Eastwood*); barren pastures on high land about Todmorden, abundant (*T. Stansfield*); Fixby (*Hudd. Nat. Hist.*)—*Miall's Fl.*
1867. Upper Shibden, not common.—*J. Walker.*
- Infrequent and sparingly in moorland pastures, often associated with Adder's-tongue; Hunter Hill, Mixenden; Shibden Head; Hollock Lea, Cragg Vale; Rake Head, Erringden; Crimsworth Dean; Staups Mill, Hippings Clough.

Var. *incisum*, Milde.

1862. Pastures near Speed Clough in Stansfield.—*A. Stansfield; Miall's Flora.*

#### EQUISETACEÆ.

[**Equisetum maximum**, L.—83. Giant Horsetail.

Native? English type. P. May.

1888. Hebden Bridge Valley.—*Lees' Flora.*

It requires confirmation, as no personal authority is given, and there is no other record whatever.]

**Equisetum arvense**, L.—108. Horsetail.

Native. British type. P. April-May.

1790. Canal banks, Mearclough bottom.—*J. Bolton; Fil. Brit. ii.*

Hebden Bridge.—*S. Gibson; Herb. S. King.*

1844. Luddenden.—*S. King.* 1867. Shibden.—*J. Walker.*

Common on damp waste ground, railway and canal banks, &c.

**Equisetum sylvaticum**, L.—97. Wood Horsetail.

Native. British type. P. April-May.

1790. In wet, sandy soils, in woods and meadows about Halifax, abundantly.—*J. Bolton; Fil. Brit. ii.*

1839. Rough Hey Wood, Norland (*J. Shepherd*); 1841. Denhouse Wood, near Luddenden.—*Herb. S. King.*

1888. Hebden Valley.—*F. A. Lees.*

Common in damp woods, cloughs, stream banks, and marshy ground throughout the parish.

**Equisetum palustre**, L.—106. Marsh Horsetail.

Native. British type. P. June-July.

1790. On the banks of the canal below Mear Clough bottom, near Halifax, plentifully, along with the two former species.—*J. Bolton ; Fil. Brit. ii.*

Infrequent, in boggy ground, ditches, &c.: Ogden, Mixenden, Hipperholme, Tag Lock, Elland Park Wood, Copley, Luddenden Dean, &c.

**Equisetum limosum**, Sm.—107. Horsetail.

Native. British type. P. June-July.

1833. In the canal near Mytholmroyd.—*Herb. Leyland.*

1867. Shibden.—*J. Walker.*

Infrequent, in ditches, streams, and marshy places: Ogden, Mixenden, Tag Lock, Sowerby, Dean Head Clough, Cob Clough, Bogden Clough, Withens Clough, Colden Clough.

**Equisetum hyemale**, L.—41. Shave-grass.

Native. Scottish type. P. August.

1775. In a rotten marshy place near Mixenden mill; in a marshy place at the bottom of Northdean in Greetland, found there by Mr. Stephen Hartley.—*J. Bolton.*

1790. In a field belonging to an estate called Upper Brier, in Northowram.—*J. Bolton ; Fil. Brit. ii.*

In a clough at Upper Brier in Northowram, nearly opposite to Belvedere.—*Herb. Leyland.*

1888. North Dean bottom, in Greetland.—*F. A. Lees.*

Has always been rare, and Lees' confirmation of an old station is the only recent record.

LYCOPODIACEÆ.

**Lycopodium Selago**, L.—88. Fir moss.

Native. British type. P. July.

1666. At Dovestones, in the side of Yorkshire, near Widop.—*C. Merrett ; Pinax, 25.*

1775. Upon Warley, Rishworth, Sowerby and Norland moors, generally upon the highest places thereof.—*J. Bolton.*

Norland Moor, &c., frequent.—*Herb. Leyland.*

1840. Moors near Halifax, Todmorden, &c.—*Baines' Flora.*

1888. Still . . . in many of the exposed craggy places on the summit ridge of the Pennine range dividing Yorkshire from Lancashire, both north and south of Todmorden.—*F. A. Lees.*

[**Lycopodium inundatum**, L.—57. Club moss.

Native. Extinct? British type. P. July.

1833. Norland Moor.—*Herb. Leyland.*

1836. Norland Moor.—*James Tate ; Herb. S. King.*

1840. Norland Moor, near Halifax.—*Baines' Flora.*

Very doubtful if it still remains there, for the moor has been frequently visited in recent years without meeting with it. Lees suggests that it is an impermanent species, uncertain in its localities, occurring only on *bare* wet peat.]

**Lycopodium clavatum**, L.—94. Stag's-horn moss.

Native. British type. P. July-August.

1775. Upon Warley, Rishworth, Sowerby, and Norland moors, generally upon the highest places thereof.—*J. Bolton.*

Norland Moor, &c.—*Herb. Leyland.*

1888. Hebden and Halifax moors.—*F. A. Lees.*

The only club-moss seen within the last ten years, and even this is now extinct at one of the places in question, viz. :—Midge Hole, Hebden Bridge ; but it is still known to Mr. Needham at Pecket Wood.

**Lycopodium alpinum**, L.—55. Alpine Club-moss.

Native. Highland type. P. August.

1666. Near the mile-cross, west from Halifax.—*C. Merrett ; Pinax*, 80.

1775. Upon Warley, Rishworth, Sowerby, and Norland Moors, generally upon the highest places thereof.—*J. Bolton.*

Sowerby Moor, and very common on the moors about Todmorden.—*Herb. Leyland.*

Warley Moor. *Herb. S. King.*

1840. On Sowerby, Wadsworth, and Midgley moors, frequent.—*Baines' Flora.*

1862. Langfield Moor, near Todmorden ; and near Bridestones, Stansfield Moor.—*T Stansfield ; Miall's Flora.*

Certainly gone long ago from Mile Cross, in Gibbet Lane; and no longer common or frequent on any of the moors. Probably all the club-mosses have become much rarer within the last century, or even half-century; but with so much moorland within the parish it is improbable that they have become extinct. Lack of records is in part due to difficulty of free access to the moors, and consequent comparative neglect of their more scattered plants. But it also seems likely that the practice of firing the moors, in the interests of grouse, has brought about the more or less complete disappearance of the club-mosses, and some other moorland plants.

#### SELAGINELLACEÆ.

***Selaginella selaginoides***, Gray.—58.

Native. Highland type. P. July.

Very rare, on boggy moors: no record before 1895, when Mr. C. E. Moss and Mr. C. Fielding found it on the way to Blackstone Edge, about a mile before the White House.



# THE MOSS-FLORA.

CHARLES CROSSLAND, F.L.S.

## INTRODUCTION.

THE accompanying list of mosses is based very largely upon the labours of Bolton, Gibson, Nowell, and other early workers in this branch of botany, within the boundaries of the parish of Halifax. The results of their individual efforts have been registered in several previously published floras. All records considered to be of a satisfactory nature have been utilised again. In addition, all existing local herbaria containing mosses have been consulted; these have furnished several species, of which no records have hitherto been published. In many instances, when thought necessary, and when the material was available, old records have been checked by an examination of the specimens.

No records can be satisfactorily traced for this district prior to those contained in the Catalogue of Plants, which forms not the least interesting or valuable portion of Watson's History of Halifax (1775). This catalogue is now generally accepted as being the work of James Bolton. It contains 89 species under the heading of Mosses: their numbers being 201-289. Of these, 69 have been confirmed by recent gatherings, two are now included in the liverworts, one is a synonym and two are not traceable. The remaining fifteen are all known British mosses, but have not been again recorded for this district. Possibly a few of the fifteen may be errors: the list was made and published when the study of these minute plants was in its infancy, and the descriptions meagre. Nor had Bolton any opportunity of correcting the catalogue when it had once been published, though he probably recognised that it contained some mistakes, as he continued to work at the Halifax flora for many years afterwards. These unconfirmed records are here placed within brackets. The disappearance of other mosses may be accounted for by the great changes wrought in the district by the increasing vitiation of the atmosphere and

the pollution of streams during the last century and a quarter. A few are still gradually, but surely, disappearing.

It is to be regretted that Bolton, on reaching this portion of his flora, ceased to give his interesting information as to habitat, etc., under each species, as had been done with the flowering plants and ferns in the earlier part of the catalogue. He remarks: "To avoid being tedious, the places where the mosses and lichens in Halifax parish are to be found will be omitted, and their species only enumerated by their trivial names, as mentioned in Hudson's *Flora Anglica*; but the more curious Botanic Reader, by application to the Publisher, may be informed where he may receive ample information concerning any or all of these." We should have preferred him being "tedious." He would have preserved to us much valuable information concerning the surroundings of Halifax and the district generally, as they appeared at the time he sought out their botanical treasures.

The next source of information in order of date is the herbarium of Roberts Leyland. It contains about 110 species of mosses, collected within the parish, and many more from the cloughs just over the borders on the Lancashire side. The majority of the packets are dated 1834 and 1835. One specimen, *Orthotricum crispum*, was collected on trees in Ogden Clough, November 14th, 1819, and is still in very good examinable condition. Many packets afford evidence that both Gibson and Nowell communicated mosses to this herbarium. It is now at Belle Vue, and the mosses are stored in a series of card-board boxes, each with a printed index of its contents. I am sorry to say the last of the series is missing: this is to be regretted, seeing that several interesting Hypnum come at the end.

There is another collection of mosses at the same place, presented by Colonel Akroyd, but being mostly from other districts, these do not afford much local information.

Nowell's portfolio of British mosses, now in the safe custody of the librarian at the Free Public Library, Todmorden, has been examined. It is in a good state of preservation, and contains, amongst others, 147 species collected within a few miles of Todmorden. The only drawback connected with this collection, is, that in many instances, the exact station and date when and where the moss was found are not given. In such cases "Near Todmorden" may mean either the Lancashire or the Yorkshire side of the boundary. This omission

might have been remedied had not a large quantity of Nowell's duplicates been burnt as rubbish about the year 1898. This, I am informed, was prior to the effects of the late Todmorden Botanical Society (which included Nowell's specimens) being handed over to the Todmorden Corporation. There is a probability that the destroyed packets would have revealed the information we are now in want of. That it was Nowell's custom to fully label his specimens may be learnt from a glance at a few of his packets found in Leyland's herbarium. A few still remain in the Todmorden Library, similarly endorsed with all the necessary particulars. The arrangement of his portfolio was probably one of Nowell's latest works, for the names attached to some of the mosses are more modern than those employed by him in Baines' Flora and the Supplement.

The Floras containing most records for this district, furnished by Gibson and Nowell, are "Baines' Flora of Yorkshire" (1840); "Supplement" to the same (1854); and "Wilson's Bryologia Britannica" (1855). To these, the information was communicated direct: the moss portion of the "Supplement" being compiled by Nowell himself. Evidence of Nowell's work also appears in Braithwaite's British Moss Flora. Nowell's records are handed on in Miall and Carrington's Flora of the West Riding (1862), and in Dr. F. A. Lees' most valuable Flora of West Yorkshire (1888). Dr. Lees' Flora also includes much local work in this branch of botany done by Messrs. T. and A. Stansfield, C. P. Hobkirk, G. E. Hunt, Wm. West and others.

The present work further incorporates the results of recent investigations by James Needham, Hebden Bridge, the late H. T. Soppitt and the writer. Several new records, and numerous additional habitats for the older ones have been added.

The classification of the Orders, Genera, and Species, with the exception of the Sphagnaceæ, is that of H. N. Dixon's "Student's Handbook of British Mosses" (1896). This very helpful handbook, with its supplementary catalogue (1897), is the one at present most in use by British bryological students. It is likely to remain so for some time to come, though further changes are pending owing to the results of recent closer research into the natural affinities within this race of plants.

In the arrangement and nomenclature of the Sphagnaceæ, I have been guided by a recently published work on "The European Sphagnaceæ," by Dr. Warnstorff. An English

translation by Mr. C. E. Horrell, F.L.S., appeared in the *Journal of Botany* for 1900. Dr. Warnstorff's investigation into the comparative morphology of this very distinct group of plants has extended over a period of 30 years. His long continued researches have led him to formulate a new system of classification based largely on the structure, form, and relative position of the two kinds of cells, of which the leaves of both stem and branch principally consist. This new system may be said to be more natural than the old, in that it goes deeper into the structural characters by which nature has separated one "species" from another. There is so much to recommend it that it has already been generally adopted by both Continental and American bryologists. If it has a drawback at all, it is in the multiplication of what we understand as "species." Still, if these can be proved to be distinct from each other, and fairly constant in their structure, it is a move in the right direction.

Authors' names and synonyms having been more fully published in Braithwaite's than in any other British Moss Flora, they are given as found there. In cases where the names of the authorities are cited, the one in brackets is the original author of the species, while the other is responsible for the name of the genus. Where one author only is given, unbracketed, he is understood to be sponsor for both generic and specific names. Though this system often entails the citing of two authors, it ensures that the name of the original is not lost sight of. For example:—

*Bryum truncatulum* Linneus  
 = *Gymnostomum truncatulum* (Lin.) Hedwig  
 = *Pottia truncatula* (Lin.) Turner.

Synonymy has been carried no further than was necessary to enable anyone to compare the list with those of the floras quoted.

Common names have been very sparingly bestowed upon mosses. None but a few of the larger, commoner and more easily recognised species bear them, viz: Bog-moss, Pack-moss (*Sphagnum*), Feather-moss (*Hypnum*), and one or two others. The majority are too small and inconspicuous to come under general observation as distinct things, hence are commonly included under the one term, "moss." This is not sufficient for scientific purposes. Each must have a generic and specific appellation. Fortunately, in most cases the latter

represents some characteristic feature connected with the plant itself, or its habitat :—*Andrea crassi-nerva* = thick nerved Andrea; *Bryum argenteum* = silvery Bryum; *Bryum alpinum* = Alpine or mountain Bryum, etc. Most of them are at once apparent and suggestive, and answer all purposes. In works where so called popular names are added, they are mere translations of the technical terms, so we do not propose to encumber the list with them.

Short explanatory or critical notes are added to many of the records when deemed necessary, or considered of sufficient value or interest.

Observations on local distribution and moss-associations are deferred until the completion of the list.

Geographical distribution throughout Britain, has not yet been worked out and analysed so elaborately as that of the flowering plants and ferns. This lack of information renders it impossible to give a census number under each species to indicate whether it is wide spread, or is confined to one, or a few limited areas.

Among the mosses there are few, if any, denizens or aliens to deal with. One stranger though has recently appeared. Last year (1900) Mr. Needham gathered *Ulota phyllantha* near the bobbin-turning works of Messrs. Roberts and Hirst, Cote Hill, Warley. It was on an ash-tree trunk brought from Ireland, and was still living and vigorous.

When any doubt has been felt regarding the identity of any species, either old or recently gathered, the specimen has been submitted to some experienced bryologist for his opinion. Occasionally two authorities have been consulted respecting the same species. I have to thank Dr. R. Braithwaite, F.R.M.S., London; the Rev. H. N. Dixon, M.A., Northampton; Mr. M. B. Slater, J.P., Malton; Mr. E. C. Horrell, F.L.S., London; and Mr. J. H. Wheldon, F.L.S., Liverpool; for kindly assisting in the determination of critical species; also Mr. J. Needham, of Hebden Bridge; Mr. J. T. Aspin, of Halifax, and others, for the great assistance they have rendered to the work in collecting mosses in the district. Specimens representative of all recent records, with only two or three exceptions, are in my own herbarium.

## ABBREVIATIONS AND SIGNS EMPLOYED.

*Herb. Leyl.*—R. Leyland's Herbarium.

*Herb. Nowl.*—J. Nowell's Herbarium.

*Baines' Fl.*—Baines' Flora of Yorkshire.

*Supp.*—Supplement to Baines' Flora.

*M. & C. Fl.*—Miall and Carrington's Flora.

*Lees' Fl.*—Lees' Flora of West Yorkshire.

*Brit. Moss Fl.*—Braithwaite's British Moss Flora.

!—Seen *in situ* by the author.

[ ]—Either extinct or erroneous, confirmation required.

# MUSCI.

## SPHAGNACEÆ.

### *SPHAGNA ACUTIFOLIA*, Schimp.

#### **Sphagnum fimbriatum**, Wils.

1854. Stansfield Moor, rare.—*Nowell, Baines' Supp.*

1888. Keb Lumb, Stansfield Moor.—*T. Stansfield; Lees Fl.*  
Overwood, Hebden Valley, fruiting abundantly.—*J. Needham.*

Var. **tenue**, Grav. & Warnst.

Under Fould's Hill, Hardcastle.—*J. Needham; Broadhead, Erringden!*

#### **Sphagnum rubellum**, Wils. (*S. acutifolium*, var. *rubellum*, Russ.)

1862. Stansfield Moor.—*Nowell; M. & C. Fl.*

#### **Sphagnum subnitens**, Russ. & Warnst.

(*S. acutifolium* var. *plumosum*, Milde; var. *late-vivens*, Braithw.)

The most common of the *acutifolium* group. “*S. subnitens* is a very characteristic species . . . . It is distinguished from *S. acutifolium* especially by the peculiar metallic lustre of the branch leaves, and by the generally non-fibrillose stem leaves produced into a longer or shorter apex, and by the several times septate hyaline cells.” *E. C. Horvell*. So far it embraces eleven British varieties, based chiefly on the colour of the tufts. Its approximate range of altitude here is 500 to 1200 ft.

Var. **flavescens**, Warnst.

Fould's Hill, Hardcastle, in fruit.—*J. Needham.*

Var. **flavo-rubellum**, Warnst.

Hebden valley, in fruit.—*J. Needham.*

Var. **griseum**, Warnst.

Hardcastle; Hippings Clough, Stansfield; Woodhey Clough, Erringden.—*J. Needham.*

Var. **obscurum**, Warnst.

Erringden Moor.—*J. T. Aspin.*



Var. **purpurescens**, Schleip.

Howden Hole, Hardcastle.—*J. Needham*.

Var. **versicolor**, Warnst.

Erringden Moor.—*J. T. Aspin*; Saltonstall Moor, Booth Dean, between Long and Burn Cloughs !

Var. **virescens**, Warnst.

Romfolly, and Under Foulds-hill, Hardcastle.—*J. Needham*. Hollock Lee, Erringden.—*J. T. Aspin*!

*SPHAGNA SQUARROSA*, Schimp.

**Sphagnum squarrosum**, Pers.

Var. **spectabile**, Russ. & Warnst.

Stansfield.—*Herb. Nowell* and *Herb. Col. Akroyd*.

1888. Calder district moors.—*C. P. Hobkirk*; *Lees' Flora*.

Not uncommon in stream side woodlands, and in open moorland cloughs. Hebden valley, in fruit; Crimsworth Dean.—*J. Needham*. Broadhead, Erringden; Cragg Vale; Ogden Clough; Graining Water side, Widdop! More frequent than the two following varieties. Grows in less spreading beds than *S. recurvum*, *S. subnitens*, and *S. cymbifolium*. Its range of altitude here is 550 to 1,100 ft.

Var. **sub-squarrosum**, Russ.

Ogden Clough; Graining Water side, Widdop!

Var. **imbricatum**, Schimp.

*Herb. Col. Akroyd*, in fruit.

*SPHAGNA CUSPIDATA*, Schimp.

**Sphagnum cuspidatum**, (Ehrh) R. & W.

1835. Near the Bride Stones, Stansfield Moor, in fruit.—*Herb. Col. Akroyd*.

1846. Stansfield Moor, in fruit.—*Herb. Leyl.* & *Herb. Nwl.*

Common, in the aggregate, in moorland pools, partially or wholly submerged.

Var. **plumosum**, Nees and Hornsch.

1840. In fruit on Stansfield Moor.—*S. Gibson*; *Baines' Flora*.

1846. Stansfield Moor.—*Herb. Leyland* & *Herb. Nwl.*  
Erringden Moor.—*J. T. Aspin*.

Var. **plumulosum**, Schimp., Syn.

Flints, Soyland, wholly submerged in pools near the reservoir! First British record. "Resembles the preceding in habit, but is constantly smaller in all its parts."—*E. C. Horrell*. It was unknown to Mr. Horrell when 'The European Sphagnaceæ' was published, consequently was not included in the British translation.

**Sphagnum trinitense**, C. Müll Syn. I., 102, 1849.

(*S. cuspidatum*, Russ. & Warn., var. *serratum*, Lesq. & James).

Flints; same habitat as preceding! First record for West Yorks. A somewhat similar plant to some forms of *S. cuspidatum*, but the serrulation of the branch leaves is very distinct.

**Sphagnum recurvum**, Russ & Warnst. (*S. intermedium*, Hoffm. in part.)

Var. **amblyphyllum**, Warnst.

Broadhead, Erringden; Ogden Clough; Saltonstall Moor.—*J. T. Aspin!*

Var. **mucronatum**, Warnst.

Very common, to be found in almost every *Sphagnum* swamp. Like most other abundant and wide spread species, it varies much in external appearance, but is constant in its microscopic characters.

Tippett-holme and Crimsworth Dean, Hebden Bridge.—*J. Needham*. Broadhead, Erringden; High Lee Clough, Norland.—*J. T. Aspin*. Lighthazles and Flints, Soyland; Graining Water, Widdop; Ogden Clough, etc.!

**Sphagnum molluscum**, Bruch. (*S. tenellum*, Ehrh.)

1846. Stansfield Moor, rare.—*Herb. Leyl.* and *Herb. Nwl.*

1854. Stansfield Moor.—*Nowell; Baines' Supp.*

1888. Stansfield Moor, but not recently.—*T. Stansfield; Lees' Flora.*

*SPHAGNA RIGIDA*, Schimp.

**Sphagnum compactum**, DC., Fl. Fr.

1846. Stansfield Moor.—*Herb. Leyland.*

1854. Stansfield Moor.—*J. Nowell; Baines' Supp.*

1888. Hudson Moor and Widdop.—*T. Stansfield; Lees' Fl.*

*SPHAGNA SUBSECUNDA*, Schimp.

**Sphagnum inundatum**, Warnst. (*S. subsecundum*, varr. *contortum* and *obesum* in part).

Frequent; top of Binnroyd Clough; Norland Moor.—*J. T. Aspin*. Erringden; Ogden Clough; High-lee Clough, Norland; Booth Dean!

**Sphagnum Gravetii**, Warnst. (*S. subsecundum*).

Frequent; Broadhead, and Erringden Moor.—*J. T. Aspin*. Norland Moor and top of High-lee Clough; swampy old lane side near Broadfold Farm, Sowerby! Until recently this species has been included under *S. subsecundum* and varieties.

**Sphagnum rufescens**, Warnst. [*S. subsecundum*, varr. *contortum*, *squarrulosum*, *auriculatum* and *laxum* (in part.)]

1846. Stansfield Moor.—*Herb. Leyland*.

1854. Stansfield Moor.—*Nowell; Baines' Supp.*

1888. Norland Moor.—*H. F. Parsons; Lees' Fl.*

Common; in very wet places by moorland streams or in ditches, or pendant over constantly dripping edges of rocks. It varies considerably in habit according to situation; when submerged it becomes very robust with tumid, close-set branches; if given plenty of floating room the stems attain to 16 or 20 inches in length, often it is very much smaller, the two extreme forms being strikingly dissimilar. It also varies much in colour, and may be found light or dark green, or with a tinge of red, purple, brown, or even black. Grain Slack and above Lumb Falls, Wadsworth; Wood-hey Clough, Erringden—*J. Needham*; Erringden Moor—*J. T. Aspin*; Ogden Clough; Reaps, and Graining waters near Widdop; Saltonstall Moor; Norland Moor; Booth Dean, etc., etc.!

**Sphagnum crassicladium**, Warnst. (*S. subsecundum*, var. *auriculatum*).

Frequent in moorland pools, and slow, deep water courses. Fixby.—*C. P. Hobkirk, Hor. Eur. Sphag.* Gib Slack Moor; Crimsworth Dean bottom.—*J. Needham*. Light-hazles, Soyland; Erringden Moor.—*J. T. Aspin*. Cockhill, Wadsworth; Norland Moor; Burn Clough, Booth Dean!

**Sphagnum obesum**, Warnst. *S. contortum* var. *obesum*.

1866. *Herb. Leyland*.

*SPHAGNA CYMBIFOLIA*, Schimp.**Sphagnum turfaceum**, Warnst.

Not common; Horse Clough above Lumb Falls; swamp at the bottom of Crimsworth Dean; Fould's Hill, Hardcastle.—*J. Needham*.

**Sphagnum cymbifolium**, (Ehrh.) Hedw. (*S. cymbifolium*, Ehrh. (in part).

1775. *J. Bolton*. (*Sphagnum palustre*).

1834. Gorple, in fruit.—*Herb. Col. Akroyd*.

1846. Stansfield Moor. *Herb. Col. Akroyd* and *Herb. Nwl*.

Var. **glaucescens**, Warnst.

Common; Tippettholme, Overwood, Foulds' Hill, and several other places in the Hebden Valley; Crimsworth Dean; Woodhey Clough, Erringden.—*J. Needham*. Broadhead.—*J. T. Aspin*. Saltonstall Moor!

Var. **pallesens**, Warnst.

Hippins Clough.—*J. Needham*.

**Sphagnum papillosum**, Lindb.

Not common.

Var. **normale**, Warnst.

Stansfield Moor.—*Nowell*; *Hor. Eur. Sphag*.

Erringden Moor.—*J. T. Aspin*; Norland Moor!

Var. **sublæve**, Limpr.

Hebden Bridge.—*J. Needham*; *Hor. Eur. Sphag*.

## ANDREÆACEÆ.

**Andreæa petrophila**, Ehrh. (*A. rupestris*, Hedw.)

1837. Rocks on Stansfield Moor.—*Herb. Leyland*.

1840. Rocks on Stansfield Moor.—*S. Gibson, Baines' Fl.*

1888. Bottom of Hudson Moor, Harley Wood, nearly extinct.—*T. Stansfield, Lees' Fl.*

This species has not been found recently.

**Andreæa Rothii**, Mohr.

1837. Rocks, Stansfield Moor.—*Herb. Leyl.*

Hudson and Staups Clough, and Hebden Valley rocks, rare.—*A. Stansfield, Lees' Fl.*

Not found recently.

**Andreæa crassinervia**, Bruch.

1864. Hebden Valley; *G. E. Hunt, Brit. Moss Fl. Lees' Fl.*  
H. N. Dixon (Students' Handbook) is of opinion that the differences between this and the preceding species are of so slight a nature "that *A. crassinervia* must be considered to be little more than a variety of *A. Rothii*, with an extremely narrow lamina reduced to one or two series of cells above, and occasionally disappearing entirely just below the apex." He places it under *A. Rothii* as a subspecies.

## TETRAPHIDACEÆ.

**Tetraphis pellucida**, (L) Hedw.

1840. High Greenwood, etc. (Heptonstall).—*Baines' Fl.*  
On banks in woods, Todmorden.—*Herb. Nwl.*

Very common in all the moist woods, especially about decaying tree-stumps which it often literally clothes. It also flourishes abundantly on the stems of dead ferns, drooping over the edges of moist woodland banks. So far as our observations have gone in this district it is invariably barren of capsules. Its method of vegetative reproduction is so successful that it has no need to form capsules and spores. There are some specimens in fine fruit in Leyland's Herbarium, gathered in Stiperden Clough just outside the parish, in 1836. It may occasionally fruit still in some out-of-the-way corner of the district, and have escaped detection. Instead of the ordinary moss capsule and spores, it produces a cup filled with gemmæ at the apex of the stem.

**Tetraphis Browniana**, (Dicks) Grev.

1837. High Greenwood (Heptonstall); Hell Holes; Keb Clough; Wickenberry Clough, etc.—*Herb. Leyl.*

1840. In many of the cloughs in the neighbourhood of Todmorden, Heptonstall, etc.—*Baines' Fl.*

Sandy rocks near Todmorden.—*Herb. Nwl.*

1854. Shady sand-stone rocks in Staups Clough, and other rocky dells near Todmorden.—*Supp.*

1888. Keb and Staups Cloughs.—*A. Stansfield, Lees' Fl.*

On the under surface of overhanging rocks, Hebden Valley, a little above Hardcastle (1896).—*J. Needham and H. T. Soppitt!* Lumb Waterfall, Crimsworth Dean.—*J. Needham.*

This moss grows head downward when on the underside of a projecting rock.

## POLYTRICHACEÆ.

**Catherinea undulata**, (L) Web. and Mohr. (*Bryum* L.; *Atrichum* P.B.)

1775. *J. Bolton*; under *Bryum*.

Banks in woods near Todmorden.—*Herb. Nwl.* and *Herb. Leyl.*

More or less common throughout the parish, except on the higher moorlands. It flourishes best by streams but may be found on moist banks in woods and lanes, borders of poor fields, etc., on the hill sides. A few of the places where it has been gathered are Hebden Valley, Crimsworth Dean, *J. Needham*; road-side, Harley Wood, Stansfield, *H. T. Soppitt*; Luddenden Dean; High-lee Clough, Barkisland; road-side below North Dean Wood; Norland; Sun Wood, Shelf; Elland Park Wood; Butts Clough, Rishworth!

**Catherinea crispa**, James. (*Atrichum laxifolium*, Wils. M.S. *Atrichum crispum*, Sull.)

Wet stones by the sides of streams near Todmorden.—*Herb. Nwl.*

1862. Discovered near Todmorden by *J. Nowell*.—*M. & C. Fl.*

Keb Clough, Todmorden, *Nowell*, 1860; several places near Hebden Bridge.—*Hunt and Hobkirk*; *Brit. Moss Fl.*

1888. Todmorden.—*A. Stansfield*; *Lees' Fl.*

Though considered a rare moss in many districts it is very abundant along the course of the Calder and tributaries above Mytholmroyd. It gradually decreases in quantity as the cloughs open out on to the moorlands. At the foot of Paddock Beck, about a mile above the Crimsworth Dean Falls, it ceases suddenly, but follows the other fork of the stream (Grain Water) a little higher. It ceases in Spa Clough, Booth Dean, at 1150 feet. It confines itself to stream courses, appropriating the little sand-banks on the sides, and is often seen in mid-stream between sand-bedded boulders. It has also been noticed in a great sheet on the dam-stones below Wade Wood. It may be known at a good distance by its closely packed,

pale green cushions. It is rather like *Mnium hornum* but has a denser habit of growth. The plants are always male or barren. Mr. Soppitt noticed it near Sterne Mill, in 1895, on the Norland side of the river.

It was discovered as a distinct species in this district by Nowell. In a paper "On Some Rare Mosses at Todmorden" read before the Todmorden Botanical Society, March 1866, he says "The little known *Atrichum laxifolium* Wils. M.S. = *A. crispum* Sullivant, was first brought into notice in this neighbourhood, either as a curious form of *A. undulatum*, or a new species, but not having been found in fruit here, it was not much noticed until a Mr. James of New Jersey, North America, sent it in fruit unnamed, along with other plants to Mr. Wilson, having met with it in fruit in New Jersey. Mr. Wilson made it out to be identical with our plant. Only the male plant has yet been found in Britain. Dr. Schimper says that it is new to Europe. It is found in nearly all the rocky moorland streams in this district, and it has also been found in similar places in Saddleworth, but I have not heard of its being found further north than here." (The Naturalist, No. 49, May 1866).

**Oligotrichum incurvum**, (Huds) Lindb. (*Polytrichum hercynicum* Hedw).

1840. Stansfield, etc.—*Baines' Fl.*

1843. Stansfield Moor, in fruit, rare.—*Herb. Leyl.* and *Herb. Nwl.*

1855. Near Todmorden.—*J. Nowell* ; *Wilson's Bry. Brit.*

1888. Stansfield Moor, rare.—*A. Stansfield* ; Hebden Valley. —*W. West* ; *Lees' Fl.*

Road side, Keb Cote, Stansfield.—*J. Needham* and *H. T. Soppitt* ! Road sides, Crimsworth Dean and Hardcastle. —*J. Needham* ! Not common.

**Polytrichum nanum**, (Dill) Neck. *P. subrotundatum*, Huds ; *Pogonatum nanum*, P. Beauv).

1775. *J. Bolton*, as *P. subrotundatum*.

Banks near Todmorden.—*Herb. Nwl.*

Stansfield Moor.—*Herb. Leyl.*



1888. Harley Wood near Todmorden.—*A. Stansfield* ; *Lees' Fl.*, with the remark “First record for the Riding.” This is scarcely accurate. Bolton’s record under *subrotundatum*, Huds., is the first for the Riding. It is worth noting that Dr. Braithwaite in his *Brit. Moss. Fl.* retains Hudson’s name for this species.

Not common. In addition to the above localities it has been met with in Crimsworth Dean (*J. Needham*), Grainings Water Valley below Widdop (*W. B. Crump*), and in the higher reaches of Booth Dean, Rishworth, *J. T. Aspin* !

**Polytrichum aloides**, Hedw. (*Pogonatum aloides*, P. Beauv). *Herb. Leyl.* Banks near Todmorden.—*Herb. Nwl.*

Plentiful about Hebden Bridge (1892).—*J. Needham* ; Walter Clough and Sunny Vale, Southowram (1895).—*H. T. Soppitt* ; Shibden (1897).—*A. Bullock*. It has also been collected in Luddenden Dean ; Hudson and Stanelly Cloughs, Stansfield ; Severhills Clough, Soyland ; Bogden, Rishworth ; Gosport Clough, Stainland ; Grainings and Reaps Water Valleys, Heptonstall, Spa Clough, Booth Dean, etc. !

It especially likes the face of a moist vertical bank partly overhung with drooping grass, where it can have all the surface to itself. Most frequent near streams.

**Polytrichum alpinum**, L. (*Pogonatum alpinum*, Brid).

Langfield Moor.—*Herb. Leyl.*

1840. Langfield Moor.—*Baines' Fl.*

1854. On the road side at Stiperden Bank, Stansfield.—*J. Nowell, Supp.*

1888. Stiperden Bank.—*T. Stansfield* ; *Lees' Fl.*

**Polytrichum piliferum**, Schreb.

Stansfield Moor.—*Herb. Nwl.*

Frequent, Stansfield Moor.—*Herb. Leyl.*

**Polytrichum juniperinum**, Willd.

1834. Shackleton Scar and Stansfield Moor.—*Herb. Leyl.*

1840. Blackstone Edge Moors, etc.—*Baines' Fl.*

Stansfield Moor.—*Herb. Nwl.*

1888. On the moors, but few records; Rishworth Valley.  
*Lees' Fl.*

**Polytrichum strictum**, Banks (*P. alpestre*, Hopp.)

Todmorden.—*J. Nowell, Brit. Moss Fl.*

Although Braithwaite gives *P. strictum* specific rank he confesses “to be more in accord with the authors who regard it as a variety of *P. juniperinum*, for it will be seen there are no structural differences between them.” Dixon places *strictum* as a subspecies of *P. juniperinum*, and remarks as follows: “The characters which separate them, though chiefly comparative and insufficient to justify giving it specific rank, are fairly stable, and it seems to fill its right place as a sub-species.”

**Polytrichum gracile**, Dicks.

Langfield Moor.—*Herb. Nwl.*

1845. Stansfield Moor.—*Herb. Leyl.*

1854. Stansfield Moor, rare.—*J. Nowell, Supp.*

1888. Langfield Moor.—*A. Stansfield; Hebden Bridge.—C. P. Hobkirk; Lees' Fl.*

Reaps Water Valley, Heptonstall.—*W. B. Crump!*

**Polytrichum formosum**, Hedw.

Woods, Hebden Valley (in fine fruit).—*Herb. Nwl.*

1845. High Greenwood.—*Herb. Leyland.*

1854. Sandy banks and old shady walls in woods. High Greenwood plentifully.—*J. Nowell; Supp.*

Several places about Hardcastle Crag.—*J. Needham.*  
Northdean Wood! Barren in both localities.

Possibly barren forms of this species have often been taken for *P. commune*. When seen in fruit, it is quite easy to distinguish between the two, but, unfortunately neither of them fruits freely in this district at present. The 4-angled, pale red-brown capsule of *P. commune* is markedly different from that of *P. formosum*, which is 5-6 angled, and fawn colour when ripe. In barren plants, a transverse section through the middle of a fully developed leaf will clear away any doubt as to which of the two species is being dealt with; in *P. commune* the marginal cells of the lamellæ are bifid, while those of *P. formosum* are entire.

**Polytrichum commune, L.**

1775. *J. Bolton.*

1845. Stansfield Moor.—*Herb. Leyl.* and *Herb. Nwl.*

Common on boggy land, swampy lane and stream sides, etc., has been noted in many such places throughout the whole district; Crimsworth Dean, in fruit.—*J. Needham.*

Var. **perigoniale**, (Michx.) B. and S.

Strines lane side, Stansfield, 1892 !

Var. **minus**, Wils.

Stansfield Moor.—*Herb. Nwl.*

Var. **fastigiatum**, Wils, M.S.

1849. Keb Clough and Langfield Moor.—*J. Nowell, Brit. Moss. Flo.*

1854. Occurs on Stansfield Moor.—*J. Nowell, Supp.*

Dixon remarks "The var *fastigiatum* would seem only to be a form of var. *minus*."

**Polytrichum urnigerum, L.**

1775. *Bolton.* 1840. High Greenwood, etc.—*Baines' Flo.*

Ogden.—*Herb. Leyl.* Stansfield Moor.—*Herb. Nwl.*

Stansfield Moor.—*A. Stansfield, Lees' Fl.*

This species was accidentally omitted from its natural place after *P. aloides*.

## BUXBAUMIACEÆ.

**Diphyscium foliosum, Mohr.**

1840. Stiperden Clough, etc., near Todmorden.—*J. Nowell, Baines' Flo.*

1854. Heathy banks below Slopes (? Staups) Mill and other places near Todmorden, rare.—*J. Nowell, Supp.*

1888. Staups Clough, Eastwood; and Gorple Clough, head of Hebden Valley.—*T. Stansfield, Lees' Flo.*

Staups Clough and Hebden Valley.—*H. T. Soppitt, Halifax Nat., Vol. II, p. 124.*

Leyland's specimens are from Stiperden Clough 1836, and Cliviger 1839, both places just outside the parish. Neither Nowell's nor Soppitt's herbarium contains a local specimen, nor have I seen one myself.

## DICRANACEÆ.

**Archidium alternifolium, (Dicks) Schp. (*Phascum alternifolium*, Dicks. *Archidium phascoides*, Brid.)**

Broadbottom, Wadsworth.—*Herb. Leyl.* ; S. Gibson, Baines' Banks near Todmorden.—*Herb. Nwl.* [Flo.

1854. Harley Wood, rare.—*J. Nowell, Supp.* ; *Brit. Moss Fl.*

1888. In garden beds in autumn at Todmorden.—*T. Stansfield, Lees' Flo.*

This curious little moss differs from all others in the simple structure of its capsule, which is very rudimentary in comparison with those of all other genera. There is no differentiation of the internal tissue into columella and spore-forming cells. No columella is produced. The spores are formed by the division into four of a limited number (3 or 4) of spore mother-cells lying near the base. These features have induced some bryologists to place *Archidium* in an Order to itself. "The present is the only European species, but there are several closely allied species in N. America" (Dixon).

**Pleuridium axillare**, (Dicks.) Lindb. (*Phascum axillare*, Dicks., *Phascum nitidum*, Hedw.)

Harley Wood.—*Herb. Leyl.* Todmorden.—*Herb. Nwl.*

1888. Todmorden.—*T. Stansfield, Lees' Fl.*

Fallow fields and other bare places.

**Pleuridium subulatum**, (Huds) Rabh. (*Phascum* Huds).

1775. *J. Bolton.* Banks at Todmorden.—*Herb. Nwl.*

1888. Royd Hills, and Harley Wood near Todmorden.—*T. Stansfield, Lees' Flo.*

Common on mud banks, bare places in poor fields, waste ground, road sides, etc. ; Norland, near Sterne Mill ; on clayhill, Sunnyvale, Southowram ; waste ground, Copley ; Triangle.—*H. T. Soppitt.* Elland Park Wood ; Beverley Wood, Stansfield ; Pecket Wood, etc.—*J. Needham !*

**Ditrichum homomallum**, (Hedw) Hampe. (*Didymodon heteromallum*, Hook. and Tay. ; *Trichostomum homomallum*, B. and S. ; *Leptotrichum homomallum*, Hampe.)

Stansfield Moor ; Ogden, etc.—*Herb. Leyl*

Banks near Todmorden.—*Herb. Nwl.*

Near Todmorden.—*J. Nowell, M. and C. Flo.*

1867. Hebden Valley.—*G. E. Hunt, Brit. Moss Flo.*

1888. Todmorden.—*T. Stansfield* ; Hebden Valley.—*C. F. Hobkirk, Lees' Fl.*

Pecket Wood and Crimsworth Dean.—*J. Needham !* On shale, Hardcastle.—*H. T. Soppitt, Hx. Nat., Vol. I., p. 92.*

**Seligeria Doniana**, (Sm) C.M. *Gymnostomum Donianum*, Sm.;  
*Anodus Donianus* B. and S.)

1842. On old wall, Harley Wood; High Greenwood.—  
*Herb. Nwl.*

1854. On wet rocks overhanging the watercourse at High  
Greenwood, rare.—*J. Nowell, Supp.*

Mitholme (Colden) Clough, Heptonstall.—*J. Nowell, 1854,*  
*Brit. Moss Flo.*

One of the smallest of mosses, has only been found in a few  
places in Britain, and we have two stations for it in this  
district, both of them near Heptonstall.—*J. Nowell, The*  
*Naturalist, 1866.*

1867. Hardcastle.—*G. E. Hunt, Brit. Moss Flo.*

Base of cliff under Hardcastle Hill.—*J. Needham. Ludden-*  
*den Dean.—H. T. Soppitt.*

**Seligeria recurvata**, (Hedw) B. and S. (*Weissia recurvata*,  
Roehl.) *S. setacea* (Wulf) Lindb.

1840. Very common in Harley Wood.—*Baines' Flo.*

Shady rocks near Todmorden.—*Herb. Nwl.*

1854. Shady rocks and walls near Todmorden.—*Supp.*

On iron cobs in Harley Wood.—*J. Nowell, 1858; Hard-*  
*castle Cragg.—G. E. Hunt, 1867, Lees' Fl.; Brit. M. Fl.*

On rocks, Hardcastle.—*J. Needham; H. T. Soppitt! Hx.*  
*Naturalist, Vol. I, p. 92.*

**Brachyodus trichodes**, (W.M.) Fürnr (*Weissia trichodes*, H.  
and Tay.)

1840. On stones in Harley Wood.—*J. Nowell, Baines' Flo.*

Moist, shady rocks near Todmorden.—*Herb. Nowell; Brit.*  
*Moss Flo.*

On sand-stone rock, Hardcastle Hill.—*J. Needham, 1897.*

**Ceratodon purpureus**, (L) Brid. (*Bryum purpureum*, Huds.  
*Flo. Angl. 1762. Didymodon purpureus*, Hook.)

1775. *J. Bolton.* 1840. *Herb. Leyl.*

Banks and walls, Todmorden.—*Herb. Nwl.*

Very common throughout the parish on banks, walls, waste  
places, quarry tips, way sides, decaying lawns, etc., at all  
altitudes. A few of the localities in which it has been  
observed are Pecket Wood, Rawholme, and Crimsworth  
Dean, near Hebden Bridge.—*J. Needham. Greetland.—*  
*W. Abbott. Stanelly Clough; Copley; Elland Park*

Wood ; Rishworth ; Skircoat ; Illingworth, Ogden ; Spa Clough, Booth Dean ; Lee Bank, and Bankfield, Halifax ; Sun Wood, Shelf ; Cragg Vale ; Luddenden Dean, etc. !

This moss grows in great profusion and fruits most abundantly. It is very conspicuous in April and May, with its new crop of capsules borne on purple shining setæ. It varies much in general appearance according to age or situation, especially when not in fruit. The micro-characters of the leaves are, however, constant. The narrow, inclined, slightly furrowed capsule, with conical lid, and minute papilla at the base, and purple stalk, are the surest features by which it may be recognised in the field. This species is stated to be common "not only throughout Britain, but in all parts of the world."

[**Rhabdoweisia denticulata**, (Brid) B. and S. (*Weissia striata* var. *majus* Hook. ; *Oncophorus crispatus* (Dicks) Lindb.

1840. Green's Clough, near Todmorden.—*Baines' Flo.*

Green's Clough.—*Herb. Nwl.*

1854. Moist shady rocks in Green's Clough, near the border of the county.—*J. Nowell, Supp. ; Brit. Moss Flo.*

Green's Clough is about half-a-mile outside the parish to the S.W. of Portsmouth Station.]

**Cynodontium Bruntoni**, (Sm.) B. and S. ; *Didymodon Bruntoni* Walk-Arn.)

1840. Rocks at Thievely Scout, near Todmorden, and Rag Scout, Stansfield.—*J. Nowell, Baines' Flo.*

1846. Rocks at Thieveley Scout.—*Herb. Nwl. ; Herb. Leyl.*

Neither of these two habitats is recorded by Nowell in *Baines' Supp.* for this species. J. Needham possesses a copy of the *Supp.* in which both localities are added in M.S. Thieveley Scout is in Lancashire.

1888. Rag Scout, very rare.—*A. Stansfield, Lees' Flo.*

[**Cynodontium polycarpum**, Schp. (*Oncophorus polycarpus*, (Ehrh) Brid.)

The record of this species in *Hx. Nat.*, Vol. II., p. 124, is an error. In the specimens on which the record is based the leaf cells, especially the upper ones, are quite distinct from those of *C. polycarpum*. The fruit is immature.]

**Dichodontium pellucidum**, (L) Schp. (*Bryum* L. ; *Dicranum*, Hedw.)

1775. *J. Bolton.* Stansfield ; Ogden, etc.—*Herb. Leyl.*

Wet banks, Todmorden.—*Herb. Nwl.*

1840. Wet rocks and sides of streams, very common in the Halifax district, and in the Vale of Todmorden.—*Baines' Flo.* Not rare. —*J. Nowell, Supp.*

Not uncommon: Crimsworth Dean, High Greenwood, Hardcastle.—*J. Needham; H. T. Soppitt!* Many places in Booth Dean, Rishworth; Ogden Clough; Gosport Clough, Stainland; Blackshaw Clough, Soyland, etc.!

**Dichodontium flavescens**, (Dicks) Lindb. (*Dicranium flavescens*, Stanelly Clough.—*J. Nowell, Brit. Moss. Flo.* [Turn.

Dripping bank, river side, Hebden Bridge (opposite Hollins, Heptonstall).—*J. Needham.*

Nowell omits the Stanelly Clough record in *Baines' Supp.*, nor are there any specimens in his moss herbarium.

A much rarer plant than *pellucidum* with us. There are fruiting specimens in *Herb. Leyl.* from Shedden Clough 1834, which have been re-examined. Gibson records it in *Baines' Flo.* from the same locality. Both species are variable in their leaf characters, and it is not always safe, in the absence of capsules, to refer forms approaching *flavescens* in cell structure to that species.

Shedden Clough lies about a mile beyond the county boundary in the direction of Burnley.

**Dicranella heteromalla**, (Dill. L.) Schp. (*Bryum*, Dill. L., *Dicranum*, Hedw.)

1775. *J. Bolton.* Stansfield Moor; Ogden, etc.—*Herb. Leyl.* Banks at Todmorden.—*Herb. Nwl.*

Very common on banks in woods, cloughs, and way-sides, etc., throughout the parish, growing in dense, dark or yellowish-green tufts, or extended beds. It is one of the few mosses that can manage to survive the town atmosphere, and it may be seen appropriating patches of grass-plots after the grass has been stifled, but it rarely comes to perfection in such situations.

**Dicranella cerviculata**, (Hedw) Schp. (*Dicranum cerviculatum*

1842. Stansfield Moor.—*Herb. Leyl.* [Hedw).

On banks of peat, Langfield Moor.—*Herb. Nwl.*

1888. Todmorden.—*T. Stansfield, Lees' Flo.*

Common on moist banks, especially those of a peaty nature, in open situations. When barren it is easily overlooked



for the preceding species; when in fruit, however, its roundish capsule with distinct strumose neck readily distinguishes it. It appears to reach a higher altitude than *D. heteromalla*; at Spa Clough, Booth Dean (1000ft.), it was the commonest moss in the clough by the banks of the stream, 1901! It has been noted at Pecket Wood, Crimsworth Dean, Hardcastle, and other places about Hebden Bridge,—*J. Needham*; Studley Pike; Norland Moor; Ogden; Bradshaw,—*H. T. Soppitt*; Bin-royd Clough; Triangle; Erringden Moor; Luddenden Dean, etc.!

**Dicranella crispa**, Schp.

1892. On moist sandy ground, Hardcastle.—*J. Needham*.  
Rare.

**Dicranella secunda**, (Swartz) Lindb. (*Dicranum subulatum*, Hedw.; *Dicranella subulata*, Schp.)

1854. Clayey banks, Harley Wood, and in an old quarry at Shawbridge near Todmorden.—*J. Nowell, Supp.*

Shady banks, Todmorden, rare.—*Herb. Nwl.*

Gibson Wood, Heptonstall.—*Nowell, 1860, Brit. Moss Flo.*

Hardcastle, opposite Gibson Wood, 1896.—*J. Needham*; *H. T. Soppitt*! As stated by Nowell this moss appears to be very rare. We have not been able to find it in any other place in the district.

**Dicranella rufescens**, (Dicks) Schp. (*Anisothecium rufescens* Lindb.; *Dicranum varium* var. *rufescens*, Roehl.)

1840. Kilburn pastures, near Heptonstall.—*S. Gibson*,  
Clay banks, near Todmorden.—*Herb. Nwl.* [*Baines' Flo.*

1844. Clay scars, Stansfield.—*Herb. Leyl.*

1854. Clay banks and scars near Todmorden.—*Nowell, Supp.* [*Lees' Flo.*

1888. Langfield Moor, and Pennant Clough.—*T. Stansfield.*

Not very common: on a scar above Wet Ing, Crimsworth Dean; near Gibson Mill dam, Hardcastle.—*J. Needham*! near Sterne Mill, Norland side of river; Stanelly Clough; Hebden Valley.—*H. T. Soppitt*; on moist bank opposite Copley Mill, Greetland side; clayey soil, in field near Butts Clough, Rishworth!

The male plants often grow in colonies to themselves. When mature their reddish inflorescence is very conspicuous, and bears a strong resemblance to a *Pleuroidium* or *Phascum* in fruit.

**Dicranella varia**, (Hedw) Schp. (*Bryum rubrum* Huds. ; *Dicranum varium* Hedw. ; *Anisothecium rubrum* Lindb.)

1775. *J. Bolton*. 1844. *Stansfield*.—*Herb. Leyl.*

Moist banks, near Todmorden.—*Herb. Nwl.*

Fairly abundant in places where it does grow at all : near the Lodge, Hardcastle entrance,—*J. Needham* ; Copley ; in clay bank, Sunny Vale, Hipperholme,—*H. T. Soppitt* ; Severhills Clough, Soyland ! Red Lane Dike, Stainland.—*J. E. Crowther*.

**Dicranella Schreberi**, (Swartz) Schp. (*Anisothecium crispum*, Lindb.)

Ramsden Clough (Lancashire), Todmorden.—*Nowell, Brit. Moss Flo.*

1888. Only known on Langfield Moor, Todmorden.—*J. Nowell* teste *T. Stansfield, Lees' Flo.*

There is no specimen in Nowell's herbarium.

**Dicranella squarrosa**, Schp. (*Dicranum squarrosus* Schrad. *Anisothecium squarrosus* Lindb.)

Ogden Clough (in good fruit).—*Herb. Leyl.*

Wet banks, Todmorden.—*Herb. Nwl.*

1840. Wet rocks in mountainous situations ; bearing fruit freely in the deep cloughs in the neighbourhood of Todmorden.—*Baines' Fl.*

1854. Frequent near Todmorden.—*J. Nowell, Supp.*

1862. Halifax.—*C. P. Hobkirk, M. and C. Flo.*

1888. Yoredale shale cliff, Hebden Valley.—*F. A. Lees* ; Todmorden.—*T. Stansfield, Lees' Flo.*

Not uncommon in very wet places on the sides of cloughs, and swampy mooredge slopes. It is equally at home on the ledge of a wet rock, or on a soaking bed of peat. A fine, almost unbroken cushion a yard in diameter, was seen on a swampy bank, Grain Slack Mooredge, Crimsworth Dean, 1900.—*J. Needham* ! It has been gathered in Ogden Clough ; Spa and other cloughs in Booth Dean ; High-lee Clough, Norland,—*J. T. Aspin* ; Gosport Clough, Stainland ; Saltonstall Moor, etc. ! It is rarely found in fruit in our stations at present. *J. Needham* gathered fruiting specimens on "scar by the bridge, Hollin Hall, Crimsworth Dean, 1893."

**Blindia acuta**, (Huds) B. and S. (*Weisia acuta* Huds).

Wet rocks, Thievely Scout, Cliviger.—*Herb. Nwl.*

High Greenwood.—*Herb. Leyl.* [*Baines' Flo.*

1840. Near Todmorden, Heptonstall, etc.—*J. Nowell,*

1855. Near Todmorden.—*J. Nowell, Wilson's Bry. Brit.*

About Lumb Falls, Crimsworth Dean, in quantity, in fine fruit, 1893; Hardcastle; dripping bank, river side opposite Hollin's, Heptonstall.—*J. Needham.*

Var. **trichodes**, Braith. *Dicranum trichodes* Wils. M.S.S.; *Blindia trichodes*, Lindb.)

Green's Clough, Todmorden, 1867.—*J. Nowell*; Gorple Clough. 1880.—*Holt, Brit. Moss Flo.* Dixon considers the *B. trichodes* l.c. to be no more than a variety of *B. acuta*. After discussing the position and limits of var. *trichodes* he remarks, "The greater number of specimens labelled *B. trichodes* must certainly be referred to the type, including for instance, Nowell's plant from Todmorden, specimens of which I have, through the kindness of Dr. Braithwaite, in my herbarium." The plant gathered in 1880 by Holt in Gorple Clough, is doubtless still there, though it was not found on a visit paid there in the summer of 1900.

**Dicranoweisia cirrata**, (T.) Lindb. (*Bryum cirratum*, Huds. Flo. *Weissia cirrata*, Hedw.)

1775. *J. Bolton.*

1840. High Greenwood.—*S. Gibson, Baines' Flo.*

Banks and old walls, Harley Wood.—*Herb. Nwl.*

1854. Walls and rocks near Todmorden, rare.—*J. Nowell,*

1888. Todmorden.—*A. Stansfield, Lees' Flo.* [*Supp.*

Hardcastle.—*J. Needham, Hx. Naturalist, Vol. IV, p. 100*; Bankhouse Wood, Skircoat; on old wall, Elland Hall Wood bottom.—*H. T. Soppitt!*

**Campylopus flexuosus**, (L) Brid. (*Dicranum* Brid.)

Stansfield, High Greenwood, Blackstone Edge, &c.—*Herb.*

Rocks, High Greenwood.—*Herb. Nwl., Baines' Fl.* [*Leyl.*

Not uncommon, sometimes covering small pieces of rock, or half-buried boulders with a turfy cushion: Hardcastle,—*J. Needham*; Wade Wood, Luddenden Dean; Gosport Clough, Stainland; Hollock Lea, Erringden, &c!

**Campylopus pyriformis**, Brid. (*C. turfaceus* B & S ; *Dicranum turfaceum*, C.M.)

Dry banks in woods near Todmorden.—*Herb. Nwl.*

Near Todmorden.—*J. Nowell, Wilson's Bry. Brit.*

Ranked by Dixon as a subspecies of *flexuosus*.

**Campylopus fragilis**, (Dicks) B & S. (*C. densus*, (Schl.))

Dry banks, Staups Clough, Stansfield.—*Herb. Nwl.*; *Baines' Supp.*; *Brit. Moss. Fl.*

1855. Near Todmorden in fruit, growing intermixed with *C. turfaceus*.—*J. Nowell, Wilson's Bry. Brit.*

1888. Todmorden Cloughs.—*T. Stansfield, Lees' Fl.*

Rare in fruit: Crimsworth Dean.—*J. Needham*; Elland Park Wood; Stanely Clough, Stansfield.—*H. T. Soppitt!*

**Dicranodontium longirostre**, B & S. (*Didymodon denudatus*, (Brid.) Lindb.)

High Greenwood, Heptonstall.—*Nowell*; Hebden Valley.—*Hunt, 1865, Brit. Moss Fl.*; *Lees' Fl.*

**Dicranum Bonjeani**, De Not. (*D. palustre*, B & S ; *D. undulatum*, Ehrh.)

1854. Wet pastures near Todmorden.—*J. Nowell, Supp.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

Swampy pasture, bottom of Crimsworth Dean.—*J. Needham.*

Earlier authors confused this moss with *Dicr. undulatum* Ehrh., which was not found in England till 1887.

**Dicranum scoparium**, (L) Hedw. (*Bryum scoparium*, L. *D.*

1775. *J. Bolton.* [*Dillenii*, Taylor).

1843. High Greenwood, Ogden Clough, etc.—*Herb. Leyl.*

Rocks and old walls, High Greenwood.—*Herb. Nwl.*

Same stations, 1896; Crimsworth Dean; Pecket Wood side.—*J. Needham!* Tinker Hey fields, Greetland.—*J. Wms. Sutcliffe.*

Var. **ericetorum** Corbiere.

1902. In heathy field, Pecket Wood top.—*J. Needham!* First British record.

Mr. Wheldon has submitted specimens to M. Lachenaud, who considers the var. to be as above. Mr. Wheldon adds, "It is a frequent plant on heathery and grassy places on the W. Lancashire moorlands, and is recorded in the Channel Islands.

It is near the var. *orthophyllum*, Milde., but differs in the terminal leaves being much longer and more flexuose, concave but not tubular, strongly toothed both on margin and back. It is a plant I have frequently gathered here (W. Lanc.), and have usually regarded it as coming between the type and the var. *orthophyllum*. You had better put it on record in your paper, as the Channel Island plant was only recorded in a French article."

**Dicranum majus**, Sm. (*D. scoparium*, var. *majus*, H & T.)

Rocks, High Greenwood.—*Herb. Nwl.* [Herb. Leyl.

1843. Woods near Heptonstall; Ogden Clough, etc.—

1888. Rag Scout; Hebden Valley.—*A. Stansfield, Lees' Fl.*

1893. Hardcastle Hill,—*J. Needham!*

Nowell's specimens from High Greenwood are very fine.

**Dicranum fuscescens**, Turn. (*D. scoparium*, var. *fuscescens*).

1845. Knots Wood near Todmorden.—*Herb. Leyl.*

Rocks, High Greenwood.—*Herb. Nwl.*; *J. Nowell, Supp.*

1888. Hebden Valley.—*A. Stansfield, Lees' Fl.*

In great quantity, road side bank, Wood Lane, a little below Catherine House, Luddenden Dean, 1900! A very variable species, its extremes being exceedingly dissimilar. Mr. Wheldon, to whom the Luddenden Dean specimens were submitted, sent a form gathered on the grit-fells of Lancashire, to which ours bears but little resemblance.

**Leucobryum glaucum**, (L) Schp. (*Bryum* L; *Dicranum*

1775. *J. Bolton.* [Hedw.)

Moist banks on moors near Todmorden.—*Herb. Nwl.*

1888. Heptonstall.—*C. P. Hobkirk, Lees' Fl.*

1896. Near Hardcastle.—*J. Needham!*

Always barren here. The fruit is rare in all districts. It grows in dense convex cushions 6-12 inches, or more, across. There are some fine tufts in the Hardcastle woods on the low side of the road, between the Lodge and Gibson Mill.

FISSIDENTACEÆ.

**Fissidens exilis**, Hedw.

On banks near Todmorden —*Herb. Nwl.*

1863. Todmorden.—*Bv. M. Fl*

Hollin Hall, Crimsworth Dean.—*J. Needham*.

1898. Harley Wood.—*H. T. Soppitt!* *Hx. Nat.*, IV., 80.

A minute moss with a stem only a line ( $\frac{1}{12}$  inch) long, and easily overlooked. In woods and on shady banks.

**Fissidens viridulus**, Wahl.

Hippings Clough and Stanelly Clough.—*J. Needham* ;

Norland Clough.—*H. T. Soppitt* ; Wall crevice, Copley ;

On stone in water course, top of Hollas Lane, Norland !

On moist rocks and in wall crevices.

**Fissidens pusillus**, Wils.

1852. Near Todmorden.—*Nowell* ; near Heptonstall.—

*Dr. Wood, Br. M. Fl.* [*M. & C. Fl.*

1862. Sparingly on moist rocks, near Todmorden.—*Nowell*,

1888. Near Halifax.—*W. West., Lees' Fl.*

1898. Binn-royd Clough and Southowram.—*H. T. Soppitt*,  
*Hx. Nat.*, II., 124.

F. A. Lees says "Nowell's Todmorden locality is outside the Riding." There is no specimen in Nowell's herbarium.

**Fissidens incurvus**, Starke.

Banks at Todmorden.—*Herb. Nwl.*

1854. Sparingly on moist rocks near Todmorden.—*Nowell*,

1853. Harley Wood.—*Nowell, Br. M. Fl.* [*Supp.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

**Fissidens tamarindifolius**, Wils. (*incurvus*, var. *tamarindifolius*,

Banks at Hippings Clough.—*Herb. Nwl., Lees' Fl.* [Braith.]

1850. Stansfield and Heptonstall.—*Nowell, Br. M. Fl.*

1854. Grassy banks and fields, Stansfield, very rare.—  
*Nowell, Supp.*

**Fissidens bryoides**, (L) Hedw. (*Hypnum bryoides*, L.)

1775. *J. Bolton*. On banks near Todmorden.—*Herb. Nwl.*

1868. Fixby.—*C. P. Hobkirk*.

Crimsworth Dean.—*J. Needham* (1892), Elland Park Wood ;

Elland Hall Wood ; Hardcastle (abundant) ; Binnroyd

Clough ; Stump Cross ; Cragg Vale ; Stanelly Clough, etc.

Common on moist banks, especially the sides of cloughs, and in damp woods.

[**Fissidens Curnowii**, Mitt.

1897. Near Todmorden.—*Hx. Nat.*, II., 124.

Being doubtful of this record, specimens were submitted to Mr. J. A. Wheldon, who considers it to be "a tall, shade-grown form of *F. bryoides*, which occurs frequently in sandy soil by deep cuttings and ditches," and adds, "*F. Curnowii* is a maritime plant usually, and yours cannot, I think, be referred to it.]

**Fissidens osmundoides**, (Swartz) Hedw.

Boggy places, Langfield Moor.—*Herb. Nwl.*

1854. Wet rocks at Stopes (Staups) Clough, and boggy ground at Langfield Moor.—*J. Nowell, Supp.*

1888. Staups Clough, etc., near Todmorden.—*A. Stansfield, Lees' Fl.*

**Fissidens adiantoides**, (L) Hedw. (*Hypnum*, L.; *Dicranum* 1775. *J. Bolton*. [Sibth].)

1833-4. Walter Clough, Southowram; Midge-hole Clough, Hebden Bridge.—*Herb. Leyl.*

1838. Stansfield Moor; Ogden Clough; Turner Clough, Rishworth.—*Herb. Leyl.* Bogs, Stansfield.—*Herb. Nwl.*

Colden Clough, 1892; Lumb Falls, Crimsworth Dean, etc., 1896.—*J. Needham!* Hardcastle.—*H. T. Soppitt*; Riding Bridge, Luddenden Dean, on branch of alder root, attached to a bunch of *Schinzia alni*; Turner Clough in the swampy place where *Trollius europæus* grows! Not uncommon on wet banks by streams, and about wet rocks.

**Fissidens taxifolius**, (L) Hedw. (*Hypnum* L.; *Dicranum*, 1775. *J. Bolton*. [Sibth].)

Banks and moist rocks near Todmorden.—*Herb. Nwl.*

Harley Wood.—*J. Nowell, M. & C. Fl.*

1868. Fixby.—*C. P. Hobkirk.*

Riverside, Hardcastle,—*J. Needham* 1893; Elland Park Wood, 1897; Upper Shibden, 1899.—*H. T. Soppitt.* In cavity, dripping wall, Ripponden Bank! Said to be common on moist banks in shady woods.

GRIMMIACEÆ.

**Grimmia apocarpa**, (L) Hedw. (*Bryum apocarpum*, L).

1775. *J. Bolton*. [*Herb. Leyl.*

Harley Wood; Ogden; on the dam stones, Sterne Mill.—Midge-hole road, Hebden Bridge; in little black cushions on the wall-top.—*J. Needham.*



**Grimmia pulvinata**, Sm. (*Bryum pulvinatum*, L).

1775. *J. Bolton*. 1836. Frequent.—*Herb. Leyl.*

In dark coloured cushions on the wall-top, Midge-hole road.—*J. Needham*. On wall, top of Stanelly Clough.—*H. T. Soppitt, J. Needham!* All the Moss Floras mark this as “common.” Possibly it may have been common here at one time, but is not so at present. Stanelly and Midge-hole are the only places where we have met with it.

**Grimmia trichophylla**, Grev.

1836. Rocks, Stansfield Moor.—*Herb. Leyl.* Spcms. re-examined.

**Grimmia Doniana**, Sm.

1836. Walls, Stansfield Moor.—*Herb. Leyl.*

1840. Stansfield Moor.—*J. Nowell, Baines' Fl.* [*Lees' Fl.*

1888. Stansfield Moor, now seldom seen.—*A. Stansfield*, *Nowell* omits this sp. in *Baines' Supp.* It is inserted in M.S. in a copy of the Supplement now in the possession of Mr. Needham.

[**Rhacomitrium ellipticum**, (Turn) B. & S. (*Trichostomum ellipticum*, Turn).

1840. Crimsworth Dean.—*S. Gibson, Baines' Fl.* “Is erroneous.” *J. Nowell, Supp.* 1854.]

**Rhacomitrium aciculare**, (L) Brid. (*Bryum*, L; *Trichostomum*, Beauv.)

1775. *J. Bolton*. 1834. Ogden Clough.—*Herb. Leyl.*

Wet rocks by rivulets near Todmorden.—*Herb. Nwl.*

1840. Wet rocks, frequent: Ogden Clough; cloughs in the neighbourhood of Todmorden and Heptonstall.—*Baines' Fl.*

1888. Hudson Clough; Hebden Valley, etc.—*A. Stansfield*; Binn-royd Clough.—*H. F. Parsons, Lees' Fl.*

Common on wet rocks in and near streams. Crimsworth Dean; Hardcastle; cloughs in High Greenwood.—*J. Needham*; Luddenden Dean.—*H. T. Soppitt!* Hollock Lea.—*J. T. Aspin!* Binn royd Clough; Spa Clough, Booth Dean, etc.!

**Rhacomitrium fasciculare**, Brid. (*Trichostomum*, Schrad).

1834. High Greenwood; Hell Holes; Langfield Moor; Ogden Clough, etc., frequent.—*Herb. Leyl.*

1888. Todmorden.—*A. Stansfield, H. F. Parsons, Lees' Fl.*

Lumb Waterfall, etc., Crimsworth Dean.—*J. Needham!*  
On damp rocks.

**Rhacomitrium heterostichum**, Brid. (*Trichostomum*, Hedw.;  
*Grimmia*, C. Muell.)

Old walls near Halifax, frequent.—*Herb. Leyl.*

Not recently met with: Leyland's Herbarium specimens upon which the Halifax record was established, have been re-examined and the record confirmed!

**Rhacomitrium lanuginosum**, Brid. (*Bryum hypnoides*, L.;  
*Trichostomum lanuginosum*, Hedw.; *Grimmia hypnoides*,  
1775. *J. Bolton*. [Lindb.]

1840. Ogden and Turner Cloughs, etc.—*Herb. Leyl.*  
(Specms. in fruit).

1898. On sand stone, Gibson Mill, Hardcastle.—*J. Needham.*

**Rhacomitrium canescens**, Brid. (*Trichostomum canescens*,  
Timm.)

1854. Heaths, banks and sandy lanes near Todmorden.—  
*J. Nowell, Supp.*

Possibly this indefinite record may be established on specimens gathered on the Lancashire side of the county boundary. Both Leyland's and Nowell's herbarium specimens are from Sheddon Clough.

**Ptychomitrium polyphyllum**, (Dicks) Furnr. (*Trichostomum*,  
Turn; *Glyphomitrium*, Mitt.)

High Greenwood, Heptonstall.—*Herb. Leyl.*; *Baines' Fl.*

1854. Old walls near Todmorden, rare.—*J. Nowell, Supp.*

1888. Hebden Valley.—*Lees' Fl.*

1897. On old wall, Midge-hole road, Hebden Bridge.—  
*Needham & Soppitt.*

**Hedwigia ciliata**, (Dicks) Ehrh. (*Anictangium ciliatum*, Hedw;  
*Hedwigia albicans*, Lindb.)

1840. In many cloughs in the neighbourhood of Todmorden.—*Baines' Fl.* Todmorden valley, etc.—*Herb. Leyl.*

Leyland's specimens are all right, but it is doubtful whether they were collected on the Yorkshire side of Todmorden. There is no specimen in Nowell's herbarium, and it is omitted by Nowell from the *Supp.* to *Baines' Fl.*

#### TORTULACEÆ.

**Acaulon muticum**, C. Muel. (*Phascum muticum*, Schreb).

Banks near Todmorden.—*Herb. Nwl.*

1840. Harley Wood.—*Baines' Fl.* [Nowell, *Supp.*

1854. On clay bank at Stony-royd, near Todmorden.—*J.*

**Phascum cuspidatum**, Schreb. (*Phascum acaulon*, L).

1775. *J. Bolton.*

Very common on road side mounds, clayey banks, bare fields, etc.: Elland Park Wood-bottom; near Sterne Mill; Stump Cross, etc.—*H. T. Soppitt!*

**Phascum curvicolle**, Ehrh.

Todmorden.—*J. Nowell, Br. M. Fl.; Lees' Fl.*

Not recently recorded. There are no local specimens in Nowell's herbarium, nor is the Todmorden record in *Baines' Supp.*: possibly the specimens were found subsequent to the publication of that flora. Nowell knew the plant for he and Dr. Wood found it plentifully near Pontefract.

**Pottia recta**, (With) Mitt. (*Phascum rectum*, With).

Todmorden.—*J. Nowell, Br. M. Fl.; C. P. Hobkirk, Lees' Fl.*

**Pottia truncatula**, (L) Furrn. (*Bryum truncatulum*, L; *Gymnostomum*, Hedw.)

1775. *J. Bolton.* 1834. Hanging-royd Mill.—*Herb. Leyl.*  
Banks at Todmorden.—*Herb. Nwl.*

Very common; has been collected at Brook Foot; Salter-hebble; Hipperholme; on wall, Elland Park Wood; near Stern Mill; Stanelly Clough; Stump Cross, etc.—*H. T. Soppitt!* High Greenwood, and other places near Hebden Bridge.—*J. Needham.* May be found in bare fields, on hedge banks, road-side mounds, etc., throughout the parish. It also invades green-houses and flourishes on the soil in plant pots. This tiny moss, less than half-an-inch tall when full grown, may easily be overlooked; but, when once seen, may be readily recognised by its short, stout capsule with obliquely-pointed lid.

**Pottia minutula**, Furrn. (*Pottia Starkei*, var. *Davallii* Lindb.)

1897. On wall near Stump Cross, Hipperholme.—*H. T. Soppitt, Hx. Nat.!* First record for the Calder area.

**Tortula aloides**, (Koch) De Not. (*Bryum rigidum* Sm.; *Barbula aloides* Furrn.)

On Scar at Rag Scout, near Todmorden.—*Herb. Leyl.*

1840. Rag Scout.—*J. Nowell, Baines' Fl.*

1888. Rag Scout.—*T. Stansfield*; Grimscar Wood.—*C. P. Hobkirk, Lees' Fl.*

There has been a little confusion between three nearly related species, and all have at times been named *Tortula rigida*. Leyland's spcms. probably supplied by Nowell, come under *T. aloides*.

***Tortula marginata*, Schp.**

1898. On grassy wall top near Stump Cross.—*H. T. Soppitt, Hx. Nat., III., 127.* First record for the Calder drainage area.

***Tortula muralis*, (L) Hedw. (*Bryum murale*, L; *Barbula***

1775. *J. Bolton.* [Timm.)

Frequent.—*Herb. Leyl.*

Walls, Todmorden.—*Herb. Nwl.*

Very common throughout the parish on the mortar of walls: Shibden, Cromwell Wood, Coley, Pecket Wood, &c., particularly abundant on the road-side walls about Rishworth. It fruits freely. Its broad, hair-pointed leaves render it most easy to distinguish, by the aid of a pocket lens.

***Tortula subulata*, (L) Hedw. (*Bryum subulatum*, L; *Barbula***

1775. *J. Bolton.* [P. Beauv.)

1834. Rocks, Stansfield; High Greenwood, etc.—*Herb. Leyl.*

1868. Fixby and Grimscar.—*C. P. Hobkirk, Hist. of Huddersfield.*

Hardcastle; Pecket Wood.—*J. Needham 1892.* Road-side, Hipperholme.—*H. T. Soppitt!*

***Tortula ruralis*, (L) Ehrh. (*Bryum*, L; *Barbula*, Hedw.)**

1775. *J. Bolton.* Not since recorded for this area.

***Barbula lurida*, Lindb.**

1895. On limed wall, Binn-royd Clough, Norland; 1897. Hipperholme.—*H. T. Soppitt.*

***Barbula rubella*, (Hoff) Mitt. (*Weissiacurvirostra*, H. & Tay; *Didymodon rubellus*, B. & S.)**

1840. Heptonstall and Hebden Bridge.—*S. Gibson, Baines' Rocks and old walls near Todmorden.—Herb. Nwl.* [Fl.

Crimsworth Dean ; Pecket Wood : Hardcastle, and other places about Hebden Bridge.—*J. Needham*. Norland ; Luddenden Dean ; Turner Wood, Rishworth ; Triangle ; Elland Park Wood, etc.—*H. T. Soppitt!* Shibden.—*A. Bullock!* Apparently common, probably it will yet be found in many other parts of the parish. Though *F. A. Lees* says of it “rather rare on the grits of Calder district,” the above recent records speak to the contrary.

***Barbula tophacea*** (Brid) Mitt. (*Didymodon trifarius* Hook and Tay. ; *Trichostomum tophaceum* Brid ; *Barbula brevifolia*, 1840. High Greenwood.—*Baines' Fl.* [Lindb.]

1854. Wet rocks at High Greenwood.—*Supp.* ; 1888.—*T. Stansfield, Lees' Fl.*

1893. On scar, High Greenwood.—*J. Needham*.

Dr. Braithwaite, who received specimens from Nowell, in 1841, collected at Ramsden Clough, Lancs., and near Todmorden, places this species under *Barbula brevifolia* Lindb., in his *Brit. M. Fl.*

***Barbula fallax***, Hedw. (*Tortula fallax*, Schrad). [*Herb. Nwl.* Pastures, Stansfield.—*Herb. Leyl.* Near Todmorden.—Pecket Wood.—*J. Needham* ; field, Butts Clough, Rishworth!

***Barbula rigidula***, Mitt. (*Bryum imberbe*, Dill ; *Didymodon rigidulus* Hedw.)

1775.—*J. Bolton*. Rocks, Stansfield.—*Herb. Leyl.*

1840. Shady rocks, Stansfield Moor ; High Greenwood.—*S. Gibson, Baines Fl.*

1892. Midge hole road, Hebden Bridge.—*J. Needham*.

***Barbula cylindrica***, (Tayl.) Schp. (*Zygotrichia cylindrica*, Stanelly Clough.—*Herb. Leyl.* [Tayl].)

1876.—Grimscar Wood.—*C. P. Hobkirk, Lees' Fl.*

***Barbula Hornschuchiana***, Schultz.

1896. On bank, Copley.—*H. T. Soppitt*. First record for the Calder area.

***Barbula revoluta***, (Schrad) Brid.

1888. Todmorden.—*T. Stansfield, Lees' Fl.*

On wall top, Midge hole road, Hebden Bridge.—*J. Needham*.

***Barbula convoluta***, Hedw. (*Tortula convoluta*, Schrad, 1794).

Fields in Stansfield.—*Herb. Leyl.* Stansfield Moor.—*H. Nwl.*

1854. Dry banks and fields near Todmorden.—*J. Nowell*,

1888. Norland Moor.—*H. F. Parsons, Lees' Fl.* [*Supp.*

Copley.—*H. T. Soppitt*; on wall, Pecket Wood.—*J. Needham*; Luddenden Dean; on banks and in wall crevices, Illingworth, 1900!

**Barbula unguiculata** (Huds) Hedw. (*Tortula unguiculata*, Roth)  
1837. Stansfield.—*Herb. Leyl.* Nr. Todmorden.—*Herb. Nwl.*  
Pecket Wood, Wadsworth.—*J. Needham*; on waste ground near railway viaduct, Copley; Salterhebble; Elland Park Wood; Stanely Clough.—*H. T. Soppitt*! In clayey field near Butts Clough, Rishworth, etc.! Common on stiff clayey soil.

**Leptodontium flexifolium**, (Dicks) Hampe (*Didymodon flexifolium*, Hook & Tay.).

1837. Doldrum Wood, Stansfield; and Hutchins' (? Hudson) Moor, rare.—*Herb. Leyl.* Hudson Moor.—*Herb. Nwl.*  
1840. Several places in Stansfield, not in fruit.—*Baines' Fl.*  
1848. Near Todmorden, in fruit.—*J. Nowell, Br. M. Fl.*  
1854. Eaves Wood, near Heptonstall.—*Supp.* [*Lees' Fl.*  
1888. Rock at bottom of Hudson Moor, rare.—*T. Stansfield,*

**Weisia squarrosa**, C.M. (*Mollia squarrosa*, Lindb.)

1896. On clayey ground near the railway viaduct, Copley.—*H. T. Soppitt*! First record for the Calder area.

**Weisia microstoma**, C.M. (*Gymnostomum microstomum*, Hedw., Harley Wood.—*Herb. Nwl.* [*Mollia microstoma*, Lindb.]

1847. Banks, Harley Wood, rare.—*J. Nwl., Herb. Leyl.*  
1854. Banks near Hudson Mill, Heptonstall; and Harley Wood.—*J. Nowell, Supp.*  
1888. Harley Wood and Heptonstall.—*T. Stansfield, Lees' Fl.*

**Weisia viridula**, (L) Hedw. (*Bryum viridulum*, L; *Weisia controversa*, Hedw.; *Mollia viridula*, Lindb.)

1775.—*J. Bolton.* Banks, Harley Wood.—*Herb. Leyl.*  
1893. Rom-folly, near Hardcastle.—*J. Needham*; 1897. Stump Cross.—*H. T. Soppitt, Hx. Nat.* Said to be common on dry banks, etc. We have not found it so.

**Weisia rupestris** (Schleich) C.M. (*Gymnostomum rupestre*, Schleich; *Mollia æruginosa* (Sm.) Lindb.)

1837. High Greenwood and Rams Lumb.—*Herb. Leyl.*

[**Weisia curvirostris**, (Ehrh.) C.M. (*Gymnostomum curvirostre*, Hedw.)

1840. Neighbourhood of Heptonstall, and Hebden Bridge.—*S. Gibson, Baines' Fl.* Not since recorded.]

[**Weisia verticillata**, Brid. (*Bryum verticillatum*, L.)

1775.—*J. Bolton*. Not since recorded.

The fact that this moss is mostly found on dripping limestone rocks, and only occasionally on sandstone, provides reasonable room for considering that this record may be an error; but seeing that it is “occasionally found on sandstone,” and is “not uncommon,” it would be unsafe to say point blank that it is one. Unfortunately, Bolton left no localities for his mosses, or the place might be specially searched. Thirteen decades allow ample time for many things to disappear in a thriving district.]

**Trichostomum tortuosum**, (L.) Schrank (*Bryum tortuosum*, L.;  
*Mollia tortuosa*, Schrk; *Barbula tortuosa*, W. & M.)

Keb Clough, Todmorden.—*T. Stansfield*, *Lees' Fl.*

[**Cinclidotus fontinaloides**, (Lamrk) P. Beauv.

1775.—*J. Bolton*, under *Fontinalis minor*, L. Possibly Bolton's plant was *Fontinalis squamosa*; this is still very plentiful in the clear streams, and is not included in his catalogue along with *F. antipyretica*. There is no other record of this species in the Calder district.]

#### ENCALYPTACEÆ.

[**Encalypta vulgaris**, Hedw. (*Bryum extincitorium*, L.)

1775.—*J. Bolton*. Not since recorded, and doubtful, for it is mostly, but not strictly, confined to limestone districts.]

#### ORTHOTRICHACEÆ.

**Zygodon Mougeottii**, (Brid.) B. & S. (*Gymnostomum*, Bruch;  
*Amphoridium*, Schp.)

1854. High Greenwood, Heptonstall.—*Supp.*

1898.—High Greenwood; Lumb-falls, Crimsworth Dean.—*J. Needham*. Since found to be frequent in the higher reaches of Hebden Valley.

**Zygodon viridissimus**, (Dicks) Brown; *Gymnostomum viridissimum*, Sm.)

1840. Old wall at Harley Wood.—*J. Nowell*, *Baines' Fl.*; *Herb. Leyl.* This record has been omitted from all subsequent Yorkshire Floras.

[**Ulota Ludwigii**, Brid.

1840. On trees, High Greenwood.—*S. Gibson*, *Baines' Fl.*  
Not recorded for this district in any subsequent flora.]



**Ulota Drummondii**, Brid. (*Orthotrichum*, Hook; *Weisia*, Ldb.)

1834. Gibson Wood.—*Herb. Leyl.*

1840. Trunks of trees, High Greenwood.—S. Gibson; *Baines' Fl.*

J. Nowell omits this record from the *Supp.* F. A. Lees in the *Fl. W. R.*, p. 556, remarks: "Gibson's 'High Greenwood moss' given as this in *Baines' Fl.*, p. 135 (as well as his *O. Hutchinsiae* from the same place) was a variety of *O. saxatile*" (= *O. anomalum*). Unfortunately, Gibson's High Greenwood specimens, upon which the record was based, are now unattainable, so that the record cannot be checked by a re-examination of his moss. I have seen a copy of *Baines' Supp.*, in which the record appears in MS. Leyland's specimens (labelled *O. Drummondii*) were collected at Gibson Wood, about a mile lower down the valley, and there is every reason to believe they were collected by Gibson. These have been carefully examined, and also submitted to H. N. Dixon and M. B. Slater, both of whom considered them to be correctly labelled, "and certainly not *O. saxatile*." The records are further confirmed by an examination of a packet in *Herb. Leyl.* marked "*Orthotrichum Hutchinsiae*, Dick-Booth, near Heptonstall." Of the contents of this Mr. Dixon says: "these also may be safely referred to *U. Drummondii*. Mr. Slater's opinion is exactly the same. Neither moss has been met with in recent years.

**Ulota crispa**, Brid. (*Orthotrichum crispum*, Hedw.)

1819. On trees in Ogden Clough, etc.; 1834. Gibson Wood, near Heptonstall.—*Herb. Leyl.*

The 1834 record is based on a small tuft found mixed with *U. Drummondii*, by Mr. Dixon, while examining that species.

**[Ulota Hutchinsiae**, (Sm.) Hamm. (*Orthotrichum* Sm.) Incognit. Dick-Booth, near Heptonstall.—*Herb. Leyl.*

1840. High Greenwood.—S. Gibson, *Baines' Fl.* "The plant mentioned in the Flora under this name is a variety of *anomalum*" (= *saxatile*), *Supp.*, p. 165. "The only old record: 'High Greenwood, S. Gibson,' was an error, a form of *O. saxatile* (= *O. anomalum*) occurring there being intended."—*Lees' Fl.*, p. 557. See under *U. Drummondii*.]

**[Ulota phyllantha**, Brid.

1900. On tree trunk, lying at the bobbin works, Cote Hill, J. Needham. This tree trunk was from Ireland.]

**Orthotrichum leiocarpum**, B. & S. (*Polytrichum striatum*, L.)  
1775.—*J. Bolton*. Not since recorded for this district.

**Orthotrichum affine**, Schrad.

On old walls, Harley Wood.—*Herb. Leyl.* [*Lees' Fl.*

1888. On a young ash, Horsebridge Clough.—*F. A. Lees*,

SCHISTOSTEGACEÆ.

**Schistostega osmundacea**, (Dicks) Mohr. (*S. pennata*, Hook and Taylor).

1854. Green's Clough, not from the boundary of the county.  
*J. Nowell, Supp.*

1888. Grit-boulder fissures, head of Hebden Valley.—*A. Stansfield, Lees' Fl.*

This charming little moss, growing, as it does, in clefts and holes among sandstone rocks, is very difficult to find.

SPLACHNACEÆ.

[**Splachnum ampulaceum**, L.

1775.—*J. Bolton*. Not since recorded for the parish.]

**Splachnum sphæricum**, L. fil (*S. pendunculatum*, (Huds.)  
var. *sphæricum*, Swartz).

Erringden Moor, etc., etc.—*Herb. Leyl.* Stansfield Moor.—  
*Herb. Nwl.* 1888. Stansfield Moor.—*T. Stansfield, Lees' Fl.*

1893. Wood Hey, Erringden.—*J. Needham.* 1896. Wadsworth Moor.—*H. T. Soppitt!*

1901. Erringden Moor, in great profusion.—*J. T. Aspin!*

This moss has the peculiar habit of growing only upon the decaying dung of sheep and cattle: mostly on wet moorlands.

FUNARIACEÆ.

**Discelium nudum**, (Dicks) Brid. (*Bryum nudum*, Dicks); *Weisia nuda*, Hook. and Taylor.

Clay banks near Todmorden.—*Herb. Nwl.*

1840. On clayey banks in the neighbourhood of Heptonstall, etc. Not uncommon.—*Baines' Fl.*

1862. Shibden.—*M. & C. Fl.*; *J. Nowell, Brit. M. Fl.*

1888. Pennant Clough and Hebden Valley.—*A. Stansfield, Lees' Fl.*

**Ephemerum serratum**, Hampe. (*Phascum serratum*, Schreb.)

1834. Walter Clough, Southowram.—*Herb. Leyl.*

Banks near Todmorden.—*Herb. Nwl.*

1854. Railway bank, Stony-royd, Harley Wood.—*J. Nowell, Supp.*

**Physcomitrium pyriforme**, Brid. (*Bryum*, L. ; *Gymnostomum*, Hedw.)

1775. *J. Bolton*. Scout, Harley Wood.—*Herb. Leyl.*  
 1840. Harley Wood.—*J. Nowell, Baines' Fl.*  
 1888. Harley Wood.—*A. Stansfield, Lees' Fl.*  
 1892. Canal side, Salterhebble.—*H. T. Soppitt.*

**Funaria ericetorum**, Dixon. (*Gymnostomum fasciculare* (non Brid.) Sm. Eng. Bot. ; *G. ericetorum*, Bals. De. Not. ; *Physcomitrium ericetorum* B. & S. ; *Entosthodon ericetorum*, C. Muell. ; *Funaria obtusa*, (Dicks.) Lindb.) [Supp.]

1854. Moist banks in a field at Hartley-royd.—*J. Nowell*, Langfield Moor, etc.—*Herb. Leyl.*, labelled *G. fasciculare*,  
 1888. Hudson Clough.—*A. Stansfield, Lees' Fl.* [Hedw.]

There is no specimen in what remains of Nowell's herbarium, but in 1901 Mr. C. E. Moss met with a packet in Sexey's Trade School museum, Bruton, Somerset, of Nowell's gathering, labelled "*Physcomitrium ericetorum*, B. & S. Moist banks, Todmorden, 1860."

**Funaria hygrometrica**, (L) Sibth. (*Bryum hygrometricum*, (L)

1775. *J. Bolton*. [Huds.]

Banks and walls near Todmorden.—*Herb. Nwl.*

Very common : the stations where it has been noted are too numerous to give in detail. It likes dry banks, waste ground, sides of cindered paths, and about greenhouses, either in the wall crevices or in the plant pots ; it has a special preference for scorched ground where a little charcoal remains ; and, for one or two seasons the lime of new walls, or where lime has been mixed. It often grows in extreme abundance.

**MEESIACEÆ.**

**Amblyodon dealbatus**, P. Beauv. (*Bryum dealbatum*, Dicks).

1833. Stansfield Moor.—*Herb. Leyl.* [J. Nowell, Supp.]  
 1854. On ground covered with lime, Stansfield Moor.—  
 Moist places, Stansfield Moor.—*Herb. Nwl.* ; *Brit. M. Fl.*

**Aulacomnium palustre**, (L.) Schwgr. (*Mnium* L. ; *Bryum*,

1775. *J. Bolton*. [Neck.]  
 Midgley, Rushworth, Stansfield, and other moors. In fruit (fruit rare).—*Herb. Leyl.*

Not uncommon: above Lumb Waterfall, Crimsworth Dean, etc. (1896).—*J. Needham*. High-lee Clough, Norland.—*J. T. Aspin!* Saltonstall Moor; Flints, Soyland; Booth Dean, Rishworth; Gosport Clough, Stainland, etc.!

Var. **polycephalum**, Hübn. (*Gymnocybe palustris*, var. *ramosa* Lind.)

1900. Swamp, top of High-lee Clough.—*J. T. Aspin!*

**Aulacomnium androgynum**, (L.) Schwgr. (*Mnium*, L.; *Bryum*, Web.; *Orthopyxis*, P. Beauv.) [Fl.

1775. *J. Bolton*. 1840. Heptonstall.—*S. Gibson*, *Baines'*

1889. In wall crevice, Elland Hall Wood Bottom! 1896.

High Greenwood.—*J. Needham*. On rocks, North Dean Wood.—*H. T. Soppitt!* 1897. Shibden.—*A. Bullock*.

1900. In wall crevice behind the water-trough, bottom of Salterhebble Hill! In the *Hx. Nat.*, Vol. I., p. 92, *turgidum* is mentioned where this species was meant.

#### BARTRAMIACEÆ.

**Bartramia pomiformis**, (L.) Hedw. (*Bryum pomiforme*, L.)

1775. *J. Bolton*. Walls, etc., frequent.—*Herb. Leyl.*

1888. Hebden Valley.—*W. West*, *Lees' Fl.*

Not infrequent on moist banks: 1892. Hardcastle.—*J.*

*Needham!* 1896. Canal side, Salterhebble.—*H. T. Soppitt!* 1900. Damp, mossy wall, road side between Jerusalem and Mytholm, Luddenden Dean!

**Philonotis fontana**, Brid. (*Mnium fontanum*, L.; *Bryum*, Huds.; *Bartramia*. Swartz.)

1775. *J. Bolton*. Frequent.—*Herb. Leyl.*

1892. Plentiful in the Hebden Valley.—*J. Needham!*

Common in the water-runs of Luddenden Dean; Crimsworth Dean; Booth Dean; Cragg Vale; Mixenden Ings; Binnroyd Clough; High-lee Clough; Hollock Lea, and numerous other places. This moss as its name indicates, loves spring-heads where it may invariably be found. It follows the rills down the hill-sides and into the deans. Though its home is by the side of the streamlet, it will grow freely in the company of Sphagnum, or even among grass, in very wet places. Like most other common mosses it is very variable.

Var. **ampliretis**, Dixon. *Jour. Bot.*, Feb. 1902, pp. 71-3. 1900. Crimsworth Dean.—*J. Needham*. A new British record.

This variety was described as a new species in 1893 by Limpricht under the name of *Philonotis laxa*, founded on specimens collected near Lake Zurich. By the aid of Dr. C. Warnstorff of Neu Ruppin, Mr. Dixon has compared the Lake Zurich and the Crimsworth Dean plants and established their identity. In his "Note on *Philonotis laxa*, Limp." in *Journal of Botany*, Mr. Dixon has shown that the moss must be ranked merely as a variety of *P. fontana*, and he has named it *ampliretis*, as the name *laxa* had already been given to another var. of *Philonotis*.

**Philonotis calcarea**, Schp. (*Bartramea calcarea*, B. & S.).

1855. Near Todmorden.—*J. Nowell, Wils. Bry. Brit.*

Leyland's and Nowell's herbarium specimens are from Ramsden Clough, just over the border.

1901. Crimsworth Dean.—*J. Needham, teste H. N. Dixon.*

**Breutelia arcuata**, (Dicks) Schp. (*Bartramia arcuata*, Swartz).

Haven, Erringden.—*Herb. Leyl. ; Baines' Fl.*

The Erringden record has been confirmed by a re-examination of Leyland's specimens. Other localities given in Baines' are beyond the county boundary.

#### BRYACEÆ.

**Leptobryum pyriforme**, (L) Wils. (*Bryum aureum*, Huds ; *B. pyriforme*, Wigg. ; *B. unioides*, Gmel.)

1775. *J. Bolton*. Stansfield Moor.—*Herb. Nwl.*

1844. On pots in greenhouses ; also on the high moors above Todmorden.—*Herb. Leyl.*

1854. Hebden Bridge.—*S. Gibson, Supp.*

1888. Stansfield Moor (once), and in greenhouse pots.—*A. Stansfield, Lees' Fl.*

Frequent, often in greenhouses. On an old wall, Crimsworth Dean (1892) and very common in the summer of 1896 on a road side wall, Pecket Wood.—*J. Needham*. On the dry mud of an empty dam, Sim Carr, Shibden (1895).—*A. Bullock*.

**Webera elongata**, (Hedw.) Schwgr. (*Pohlia*, Hedw. ; *Bryum*, Dicks.)

1854. Near Halifax.—*Dickson* ; Scaitcliffe Wood, and one or two other places near Todmorden, sparingly.—*J. Nowell, Supp.*

There are no specimens in Nowell's herb. ; Leyland's are from Thieveley Scout and have been re-examined.

**Webera cruda**, (Linn) Schwgr. (*Mnium*, L. ; *Bryum*, Huds.)

1844. High Greenwood.—*Herb Leyl.*

**Webera nutans**, (Schræb) Hedw. (*Bryum nutans*, Schræb.)

1840. Shibden Dale, Halifax.—*Baines' Fl.*

Stansfield Moor.—*Herb. Nwl.* Shibden Clough.—*Herb. Leyl.*

Very common, especially on heathy and peaty ground, woodland banks, or near the walls of starved fields, at all altitudes : stations too numerous to detail.

**Webera annotina**, (L.) Schwgr. (*Pohlia*, Lindb.)

1900. On sandstone, Lee Mill ; 1902. Near railway station, Hebden Bridge.—*J. Needham* ; Hollas Lane, Norland ; Ogden ! First records for the parish.

**Webera carnea**, (L.) Schp. (*Bryum*, Linn ; *Pohlia*, Lindb.)

1840. Ogden Clough ; Todmorden.—*Baines' Fl.*

Dungeon Wood, Stansfield.—*Herb. Leyl.*

1888. Stanelly.—*A. Stansfield, Lees' Fl.*

1896. Elland Park Wood.—*H.T.S.!* Hebden Bridge.—*J. Needham.*

**Webera albicans**, (Wahl.) Schp. (*Bryum Wahlenbergii*, Schw.)

1840. Wet banks in Harley Wood.—*Baines' Fl.*

1843. *Herb. Leyl.*

Hebden Valley.—*A. Stansfield* ; Halifax.—*W. West, Lees' Fl.*

1897. Stanelly Clough.—*H.T.S., J. Needham!* 1898.

High Greenwood.—*J. Needham*, "The Nat.," Mar. 1901. Crimsworth Dean.—*J. Wms. Sutcliffe.*

**Plagiobryum Zierii**, (Dicks) Lindb. (*Bryum*, Dicks.)

1898. In rock crevices, Hardcastle.—*J. Needham!* First record for the Calder Valley.

**Bryum pendulum**, (Hornsch) Schp. (*B. cernuum*, B. & S.,

1854. Stansfield Moor.—*J. Nowell, Supp.* [non Lindb.)

1896. On rock, Binnroyd Clough, Norland.—*H. T. Soppitt!*

**Bryum inclinatum**, Blandow.

Wall tops near Todmorden.—*Herb. Nwl.*

1900. Dry bank, Ogden Kirk! First records for the Calder drainage.

**Bryum uliginosum**, (Bruch M.S.S.) B. & S. (*B. cernuum*, Lindb. non B. & S.)

Wet banks, "Flayroyd" Clough.—*Herb. Nwl.*

1862. Gorple Clough.—*J. Nowell, M. & C. Fl.*

1888. White Reaps and Gorple Clough.—*A. Stansfield,*

1892. High Greenwood.—*J. Needham!* [*Lees' Fl.*

**Bryum pallens**, Sw. (*B. turbinatum*, Hook. & Tayl.)

1834. Ogden.—*Herb. Leyl.* 1844. Todmorden.—*Herb. Leyl.*

1862. Todmorden.—*J. Nowell*; Hebden Bridge.—*S. Gibson,*

1888. Todmorden.—*A. Stansfield, Lees' Fl.* [*M. & C. Fl.*

1896. Ogden.—*A. Bullock*; High Greenwood and Hardcastle.—*J. Needham.* 1900. The sundew bog, Norland Moor! Northowram; Stainland.—*J. E. Crowther.* Probably common in barren state.

**Bryum bimum**, Schreb.

1896. On wall, North Dean Wood.—*H. T. Soppitt!* 1900. Near Foster Mill, Hebden Bridge; 1901. Lumb Fall, Crimsworth Dean.—*J. Needham.* First records for the Calder Valley.

**Bryum pseudotriquetrum**, (Hedw.) Schwgr. (*B. triquetrum*, Huds; *B. ventricosum*, Dicks).

1775. *J. Bolton.* Ogden Clough.—*Herb. Leyl.*; *Baines' Fl.*

Wet places near Todmorden.—*Herb. Nwl.*

1888. Luddenden.—*W. West, Lees' Fl.*

1896. High Greenwood and Hardcastle.—*J. Needham!*

Dixon ranks this as a sub-species of *B. bimum*.

**Bryum pallescens**, Schleich.

1889. On wall near the Lodge, bottom of Crimsworth Dean; 1896. Hardcastle.—*J. Needham.* Norland.—*H. T. S.!* 1900. Sandy bank near Dauber Bridge, Cragg Vale! In wall crevice Lane House, Luddenden! First records for the Calder Valley.

**Bryum affine**, (Bruch) Lindb.

1860. Todmorden.—*J. Nowell, Brit. Moss. Fl.* The only record for the Calder drainage.



Ranked as a sub-species of *B. pallescens* by Dixon.

**Bryum intermedium**, Brid.

Moist banks, Langfield Moor.—*Herb. Nwl.*

1900. Ogden Kirk.

**Bryum cæspiticium**, L.

1775. *J. Bolton.* Frequent.—*Herb. Leyl.*

On walls near Todmorden.—*Herb. Nwl.*

Common on walls, banks, etc. : Copley, Greetland ; Ogden Kirk and Brookhouse, Ovenden ; top of out-house, Illingworth ; crevice of damp wall, Lee Bank ; quarry hill, Boothdean ; Crimsworth Dean, &c.

**Bryum capillare**, L.

1775. *J. Bolton.* 1834. High Greenwood.—*Herb. Leyl.*

Rocks and walls near Todmorden.—*Herb. Nwl.*

Common : Crimsworth Dean, and other places near Hebden Bridge.—*J. Needham* ; Rishworth.—*A. Bullock* ; Upper Shibden.—*W. B. Crump* ; Luddenden Dean, etc. !

Var. **torquescens**, Husn.

Rishworth.—*H. T. Soppitt* !

**Bryum obconicum**, Hornsch.

1892. High Greenwood.—*J. Needham.* 1900. Cragg Vale !  
North Dean Wood !

Ranked by Dixon as a sub-species of *B. capillare* ; by Braithwaite as a var. only.

**Bryum atropurpureum**, W. & M.

Wet banks near Todmorden.—*Herb. Nwl.*

1901. On moist bank, Ogden Kirk, sparingly !

First records for the Calder drainage area.

**Bryum alpinum**, Huds.

1775. *J. Bolton.*

[*Nowell, Supp.*

1854. Damp rocks at Hippings Farm, Stansfield.—*J.*

**Bryum argenteum**, L.

1775. *J. Bolton.* Hebden Bridge.—*Herb. Leyl.*

1840. Walls at Todmorden.—*Herb. Nwl.*

Very common on old roofs, bases and tops of walls, waste ground, road sides, etc., throughout the parish. One of our hardiest of mosses, forming compact silvery-green beds at the foot of walls.

**Bryum roseum**, Schreb.

Woods, frequent.—*Herb. Leyl.* Specimens re-examined.

1888. Pennant Clough, Hebden Valley.—*A. Stansfield, Lees' Fl.*

**Mnium affine**, Bland. (*M. cuspidatum*, Neck; *Bryum cuspidatum*, Hedw.)  
Wet places, Widdop.—*Herb. Nwl.* [*um*, Schreb.]

1854. In field among grass, Hareley Wood.—*J. Nowell,*

1888. Todmorden.—*A. Stansfield, Lees' Fl.* [*Snpp.*]

1900. Parrock Clough, Erringden! In swampy place, Tippet-holme, Hebden Valley.—*J.N.* These specimens have been certified as *M. affine*. On re-examination we think the leaves, and character of the sterile shoots answer more fully to the descriptions given of the var. *M. elatum* = *M. Seligeri*, Juratz.

**Mnium cuspidatum**, Hedw. non Neck. (*Bryum cuspidatum*, Hedw.)  
(non Schreb.) Turn; *M. sylvaticum*, Lindb.)

1840. Stansfield Moor, etc.—*Baines' Fl.*

1841. In a field at Fast End Farm, near the Bride Stones, Stansfield Moor.—*Herb. Leyl.*

Banks, Todmorden.—*Herb. Nwl.*

Pasture below Rough, Stansfield.—*A. Stansfield, Lees' Fl.*

1892. Pecket Wood; 1893. Romfolly, near Hebden Bridge.—*J. Nm.*! 1900. Northdean Wood; Butts Clough, Rishworth!

**Mnium rostratum**, Schrad (1791) (*Bryum*, same author, 1794.)

1834. High Greenwood.—*Herb. Leyl., Baines' Fl.*

Doddbottom.—*Herb. Nwl.*

1892. High Greenwood; 1896. Hardcastle; Pecket Wood; Colden Valley, and other places about Hebden Bridge.—*J. Needham.*

**Mnium undulatum**, L. (*Bryum ligulatum*, Schreb.)

Shibden Clough, etc.—*Herb. Leyl.*

Frequent in many of our damper cloughs: Crimsworth Dean, Hardcastle, etc.—*J. Needham*; Bogden, Rishworth.—*A. Bullock*; Gosport Clough; Severhills Clough; Cob Clough; Turner Clough; Graining Water Valley, Widdop, etc!

**Mnium hornum**, L. (*Bryum hornum*, Huds.)

1775. *J. Bolton.* 1834. Shaw Wood.—*Herb. Leyl.*

1840. Halifax, Todmorden, etc.—*Baines' Fl.*

One of the very commonest of mosses; to be found in all the cloughs and woods throughout the parish. It also invades decaying lawns in and near the town, but is most at home in wet situations, near water-runs.

**Mnium serratum**, Schrad. (*Bryum marginatum*, Dicks).

1900. Tippet-holme, near Hebden Bridge.—*J. Needham*  
High Lee Clough, Norland!

**Mnium stellare**, Reich.

1888. Todmorden.—*A. Stansfield, Lees' Fl.* [J.N.]

1898. On sandstone rock, Gill-holme, High Greenwood.—

**Mnium punctatum**, L. (*Bryum punctatum*, Schreb.)

Frequent.—*Herb. Leyl.* Todmorden.—*Herb. Nwl.*

Fairly common in moist, shady places, well-troughs, and damp recesses near clough-streams; stations too numerous to give in detail.

**Mnium subglobosum**, B. & S. (*Bryum mnioides*, Wils.; *M. pseudopunctatum*, B. & S. Hook, Lond. Jour. Bot.)

Langfield and Stansfield Moors.—*Herb. Leyl.*

1844. Bogs, Stansfield.—*Herb. Nwl.*; *Brit. Moss. Fl.*

1888. Same stations.—*A. Stansfield*; Luddenden.—*W. West, Lees' Fl.*

1896. High Greenwood.—*J. Needham.*

“*Mnium subglobosum*, B. & S., was first brought under notice in this neighbourhood as being a distinct species, it having been overlooked as only a variety of *M. punctatum*; it has been found in a few places in other parts of the country, but nowhere in such abundance and perfection as in this neighbourhood.”—*J. Nowell, The Naturalist, 1866.*

#### FONTINALACEÆ.

**Fontinalis antipyretica**, L.

1775. *J. Bolton.* On Stones, Hebden Water.—*Herb. Nwl.*

Very common: attached to submerged rocks and boulders in the stream at Hardcastle (where it fruits abundantly) and other places in the Hebden Valley. In the Hebble, Wheatley, 1901; and numerous other streams. In the Canal, Salterhebble and Copley! In water-trough, Priestley Green.—*W. B. Crump.* Bracken-hill, near Ambler Thorn, etc.!

**Fontinalis squamosa**, L.

1840. In the Hebden near Lee Mill.—*S. Gibson, Baines' Fl.*  
Near Todmorden.—*Herb. Leyl.* Hebden Water.—*Herb.*  
1854. Gorple Clough.—*J. Nowell, Supp.* [*Nwl.*  
Abundant on the submerged rocks in the stream at Hard-  
castle; Spa and other cloughs, Booth Dean; Crimsworth  
Dean; Luddenden Dean; Colden; Cragg Vale, etc.  
Though found in the streams, along with the preceding,  
it reaches a much higher altitude.

## CRYPTHÆACEÆ.

- [**Cryphæa heteromalla**, (Hedw.) Mohr. (*Sphagnum aboveum*,  
1775. *J. Bolton.* Not since recorded.] [*L.*]

## NECKERACEÆ.

**Neckera crispa**, (L.) Hedw.

1840. In the Eaves, Heptonstall.—*Baines' Fl.*  
1888. Yoredale Shales, Hebden Valley.—*Lees' Fl.*  
1898. The Eaves, Heptonstall, and at Hardcastle, close to  
the footpath leading to Ladyroyd.—*J. Needham.*

**Neckera complanata**, (L.) Hubn. (*Hypnum*, Linn.)

1775. *J. Bolton.* Caldene (Colden) Clough, etc.—*Baines' Fl.*  
Woods, frequent.—*Herb. Leyl.*  
1898. On rocks in several places in High Greenwood, and  
under Ladyroyd Hill, near Hardcastle. 1902. On ash  
tree from Ireland, Cote Hill bobbin works.—*J. Needham.*  
First records for the Calder drainage area.

**Homalia trichomanoides**, (Schreb.) Brid.

1888. Near Hudson Mill, Heptonstall, but very rare.—  
*T. Stansfield, Lees' Fl.* [Dean.—*J. Needham.*  
1892. Under overhanging rock, Stone Booth, Crimsworth

## HOOKERIACEÆ.

**Pterygophyllum lucens**, (L.) Brid. (*Hypnum*, L.; *Hookeria*,  
Smith).

1775. *J. Bolton.* Binnroyd Clough, Norland.—*Herb. Leyl.*  
1840. Halifax, Todmorden, etc.—*Baines' Fl.*  
Moist banks in woods near Todmorden.—*Herb. Nwl.*  
1888. Hebden Valley.—*A. Stansfield, Lees' Fl.*  
1892. Pecket Wood, Crimsworth Dean, Hardcastle, and  
in a rill below Walshaw.—*J. Needham!* Turner Clough!  
Fruits freely in the Hebden Bridge district.

## LEUCODONTACEÆ.

[**Leucodon sciuroides**, (L.) Schwgr. (*Hypnum*, L.)  
1775. *J. Bolton*. The only record for the Calder Valley.]

[**Antitrichia curtispindula**, (L.) Brid. (*Hypnum*, L.)  
1775. *J. Bolton*. Not since recorded.]

**Porotrichum alopecurum**, (L.) Mitt. (*Hypnum*, L.)  
1775. *J. Bolton*. 1820. Riding Bridge, Wheatley.—*Herb.*  
1834. High Greenwood.—*Herb. Leyl.* [*Leyl.*  
1892. Crimsworth Dean and Hardcastle, on stones in rill,  
Lower Hebden.—*J. Needham!* 1897. Binn-royd Clough.  
—*H. T. Soppitt!*

## LESKEACEÆ.

**Anomodon viticulosus**, (L.) Hook. & Tay. (*Hypnum*, L.)  
1775. *J. Bolton*. Not since recorded, though common in  
many of the West Riding drainage areas.

**Heterocladium heteropterum**, (Bruch) B. & S. (*Hypnum*,  
Rocks near Todmorden.—*Herb. Nwl.* [Bruch.)  
1854. Wet shady rocks near Todmorden, but always  
barren.—*J. Nowell, Supp.*  
1888. Stanelly Clough.—*A. Stansfield, Lees' Fl.*  
1898. High Greenwood, on wet rocks.—*J. Needham!* 1901.  
Hebden Valley in fruit.—*The Nat., Mar. 1901, J. Needham.*

[**Pseudoleskea catenulata**, (Schwgr.) B. & S. (*Hypnum*,  
Schwgr.)  
1836. Slack Pasture, on wet rocks, Harley Wood.—*Herb.*  
*Leyl.*  
1840. On wet rocks, Stansfield Moor, barren.—*Baines' Fl.*  
The spcms. in *Herb. Leyl.* on examination prove to be  
*Heterocladium heteropterum.*]

**Thuidium tamariscinum**, (Hedw.) B. & S. (*Hypnum prolifer-*  
1775. *J. Bolton.* [*um*, Huds.)  
1892. Hardcastle; 1897. Stanelly Clough.—*J. Needham!*

## HYPNACEÆ.

**Climacium dendroides**, (L.) Web. & Mohr. (*Hypnum*, Linn.)  
1775. *J. Bolton*. 1838. Wet meadows, Stansfield.—*Herb. Leyl.*  
1840. Near Todmorden and Hebden Bridge (in fruit).—  
Wet meadows near Todmorden.—*Herb. Nwl.* [*Baines' Fl.*

1898. Above Gibson Mill, Hardcastle ; Crimsworth Dean.  
—*J. Needham*. Plentiful where it grows but rarely fruits here.

**Orthothecium intricatum**, B. & S. (*Leskea subrufus*, Wils.)

1854. Eaves Wood, Heptonstall.—*J. Nowell, Supp.*

**Isothecium myurum**, Brid. (*Hypnum curvatum*, Sw.)

1840. Trees and rocks, High Greenwood.—*Baines' Fl.*

Not recently met with, except in 1902 on ash tree from Ireland at Cote Hill bobbin works.

**Pleuropus sericeus**, (L.) Dixon (*Hypnum*, L. ; *Homalothecium*, 1775.—*J. Bolton*. [B. & S.]

1898. On rocks near the river, Hardcastle.—*J. Needham*.

Though a very common and wide-spread moss we have little of it about here. In August 1901, J. Needham noticed large quantities of it at the bobbin works, Cote Hill, on the trunk of a tree from Ireland.

[**Camptothecium lutescens**, Dill. (*Hypnum lutescens*, Huds).

1775. *J. Bolton*. Not since recorded. A fairly common moss in calcareous districts.]

**Brachythecium glareosum**, (Bruch.) B. & S.

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

**Brachythecium albicans**, (Neck.) B. & S. (*Hypnum*, Neck.)

1840. On the ground in sandy soil, Hareley Wood.—Hareley Wood.—*Herb. Leyl.* [*Baines' Fl.*

1854. Dry banks near Todmorden ; rare.—*J. Nowell, Supp.*  
Not since met with to our knowledge.

**Brachythecium salebrosum**, (Hoffm.) B. & S.

1892. Pecket Wood ; 1893. High Greenwood ; 1896. On Scar opposite Hardcastle.—*J. Needham*. First records for the Calder drainage area. A rare moss hereabouts.

**Brachythecium rutabulum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton*. Old walls near Todmorden.—*Herb. Nwl.*

1868. Fixby.—*C. P. Hobkirk*.

Common on moist rocks and walls in most, if not all, our deans. 1892. On wall, Pecket Wood ; on rocks, Hardcastle, etc.—*J. Needham*. It has been gathered, among other places, at Turner Clough ; High Greenwood ; Stanelly, and Hudson Cloughs.—*H.T.S.!* Water Scout, Shibden.—*A. Bullock* ; Crimsworth Dean.—*J. Wms Sutcliffe*.

**Var. robustum.**

1901. In swamp, Booth Dean, Rishworth !

First record for the West Riding. A fine plant bearing little resemblance to the type. "It is essentially a bog form remarkable, in this plant, for its compact, erect or suberect, tufted habit."—*J. A. Wheldon.*

**Brachythecium rivulare**, (Bruch.) B. & S. (*Hypnum*, Bruch.)

Wet stones by streams near Todmorden.—*Herb. Nwl.*

Frequent on stones in rivulets ; Todmorden.—*J. Nwl., Supp.*

Common on wet banks by streams, dripping walls, etc.

A few of the places where it has been collected are Hardcastle ; Foster Mill, Hebden Bridge ; Crimsworth Dean ; Strines, Stansfield.—*J. Needham.* Red Lane Dike, Stainland.—*J. E. Crowther.* Tag Lock.—*T. Halstead.* High Lee, Ogden, Turner, Gosport, Colden, Butts, Binn-royd, Severhills, and Cob Cloughs ; dam stones, Wade Wood ; Saltonstall Mooredge, etc. !

**Var. cataractarum**, Gautier.

On stones, river Hebden.—*J. Needham (Nat., March 1901).* First West Riding record.

**Brachythecium velutinum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton.* Old walls, Todmorden.—*Herb. Nwl.*

1892. On old wall and tree trunk, Pecket Wood ; Hardcastle.—*J. Needham.*

On old walls, Firth House, Rishworth ; Cragg Vale ; Frost Hole ; Severhills and Gosport Cloughs ; Bottomley, Barkisland ; Ogden ; Hollas Lane side, Norland, etc. ! Tag Lock.—*T. Halstead.* On soil in window-plant pot, Halifax ! Not uncommon.

**Brachythecium populeum**, (Hedw.) B. & S. (*Hypnum*, Hedw.)

Old walls near Todmorden.—*Herb. Nwl.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

Frequent on old walls and rocks. 1892. Pecket Wood ; Hardcastle.—*J. Needham.* Stanelly Clough.—*H. T. Soppitt.* Elland Park Wood ; Rooks Mount, Lightcliffe ; Turner Wood ; near Butts Clough ; North Wood, Coley ; Spa Clough, Boothdean, etc. !

**Brachythecium plumosum**, (Sw.) B. & S. (*Hypnum*, Sw.)

1775. *J. Bolton.* 1840. High Greenwood.—*Baines' Fl.*



Wet stones by streams, near Todmorden,—*Herb. Nwl.*

1868. Grimscar.—*C. P. Hobkirk.*

1888. Todmorden.—*A. Slansfield, Lees' Fl.*

Frequent on rocks and boulders in and near rills and streams: Hardcastle; Midge Hole Road; Pecket Wood.—*J. Needham.* Crimsworth Dean.—*J. Wms. Sutcliffe.* Hudson, Stanelly, and Beaumont Cloughs.—*H. T. Soppitt.* Edge of well trough, Luddenden Dean; on dripping wall, Ripponden Bank; Elland Park Wood; Parrock Clough, Erringden, etc.!

**Brachythecium purum**, (L.) Dixon (*Hypnum*, L.)

1775. *J. Bolton.* Hedge banks, Todmorden.—*Herb. Nwl.*

1840. Harley Wood; High Greenwood.—*Baines' Fl.*

Though some of the Floras state this to be a common moss, it has not recently been met with in this district.

**Hyocomium flagellare**, (Dicks.) B. & S. (*Hypnum*, Dicks.)

1840. Widdop and Stiperden Cloughs.—*Baines' Fl.*

Same stations.—*Herb. Nwl.*; *Herb. Leyl.*

1854. Frequent on wet, shady rocks by the side of the streams amongst the hills near Todmorden.—*Supp.*

1888. Hebden Bridge.—*F. A. Lees*; Norland.—*H. F. Parsons, Lees' Fl.*

One of the commonest of our stream mosses. It forms thick cushions adhering to rocks over which there is a fairly constant flow of water. It is more or less plentiful in all the cloughs. Needham has succeeded in finding it in good fruit in the river Hebden (*Naturalist, March 1900*), a circumstance of very rare occurrence.

**Eurhynchium praelongum**, (L.) Hobkirk. Synops Hed.

1775. *J. Bolton.* [206 (1884), (*Hypnum*, L.)

1892. Pecket Wood, Hollin Hall and Weting, Crimsworth Dean, in fruit.—*J. Needham.*

Not uncommon, often in grassy places in damp woods: plentiful in the *Carex pendula* bed, Elland Park Wood; moist banks, Butts Clough; Ogden Clough; Graining Water, Widdop; High Lee Clough; Colden Clough; Parrock Clough, etc.!

**Eurhynchium Swartzii**, (Turn.) Hobkirk. (*Hypnum*, Turn.)

Wet banks near Todmorden.—*Herb. Nwl.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

1902. Pisser Clough, High Greenwood.—*J. Needham.*

**Eurhynchium pumilum**, (Wils.) Schp. (*Hypnum*, Wils. MSS.

1854. Shady rocks near Todmorden.—*J. Nowell, Supp.*

Todmorden.—*J. Nowell, Brit. Moss Fl.* as *H. pallidorostre.*

**Eurhynchium myosuroides**, (L.) Schp. (*Hypnum*, L.)

1775. *J. Bolton.* Stansfield, etc.—*Herb. Leyl.* [*Lees' Fl.*

Pennant Clough and Rag Scouts, Hebden.—*A. Stansfield,*

**Eurhynchium striatum**, (Schreb.) Schimp. (*Hypnum*, Schreb.)

1900. Hardcastle.—*J. Needham.*

**Eurhynchium rusciforme**, (Neck.) Milde. (*Hypnum*, Neck.)

Stones in rivulets near Todmorden.—*Herb. Nwl.*

On stones in and near rills and streams in several places near Hardcastle; Walshaw Clough; High Greenwood; Woodend, Hebden Bridge; Lumb Fall, etc.—*J. Needham.* Stanelly Clough.—*H. T. Soppitt.* Well-trough, Priestley Green.—*W. B. Crump.* Ellistones, Greetland.—*W. Abbott.* Binnroyd Clough.—*J. T. Aspin.* Wheatley.—*A. Bullock.* Tag Lock.—*J. E. Crowther.* Crimsworth Dean; Luddenden Dean; Severhills Clough; Parrock Clough; horse troughs, road side, Shelf, and in field near Cromwell Wood; etc. etc.! Never far away from a water-run. Forms very numerous. One gathered by Aspin just above Lumb Fall, Crimsworth Dean approaches very near the var. *inundatum*, Brid.

Var. **atlanticum**, Brid.

River Hebden, in fruit (*Naturalist, March 1901*, p. 66); near Foster Mill, Hebden Bridge.—*J. Needham.*

Colden Clough; on very wet bank, Turner Clough!

**Eurhynchium murale**, (Hedw.) Milde. (*Hypnum*, Hedw. *Rhynchostegium*, B. & S.

Old walls near Todmorden.—*Herb. Nwl.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

On walls, Pecket Wood; Lower Hebden; Crimsworth Dean; Pisser Clough, Heptonstall.—*J. Needham.* Near tank in the grounds, Upper Shibden Hall; Frost Hole, Erringden; Turner Clough, etc.! Frequent

**Eurhynchium confertum**, (Dicks.) Milde. (*Hypnum*, Dicks.)

Woods near Halifax.—*Herb. Leyl.*

Old walls near Todmorden.—*Herb. Nwl.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

Common on stones, tree stumps, etc., in shady woods.

Stations too numerous to give in detail. Wilson, in *Bryologia Britannica* (1855), credits Nowell with a var. *serrulatum* Bridel, near Todmorden, and there is a specimen of it in *Herb. Leyl.*

**Plagiothecium depressum**, (Buch.) Dixon. (*Hypnum*, Bruch. *Rhynchostegium*, B. & S.)

1854. Houghton (? Hough Stone, or Hawk Stone) near Todmorden, rare.—*J. Nowell, Supp.* [*Brit.*

1855. Near Todmorden, Yorkshire.—*J. Nowell, Wils. Bry.*

1888. Hough Stone, Stansfield.—*A. Stansfield, Lees' Fl.*

**Plagiothecium Borrerianum**, Spruce. (*Hypnum elegans*, Hook.)

Under shade of rocks in woods near Todmorden.—*Herb. Nwl.*

In woods near Todmorden.—*J. Nwl., Supp.; Wils'. Bry. Brit.*

1888. Hebden Bridge.—*C. P. Hobkirk. Todmorden.—A. Stansfield, Lees' Fl.*

Very common; clothes moist, shaded road sides and banks, with pale glossy-green patches. Abundant on the floors of woods throughout the district. Creeps close to the edge of the water in some of the cloughs. Found at all altitudes between those of Tag Lock and Widdop.

**Plagiothecium pulchellum**, (Dicks.) B. & S. (*Hypnum*, Dicks).

1840. Gorple Clough.—*Baines' Fl.*

1854. Gibson Wood, Heptonstall, rare.—*J. Nowell, Supp.*

1855. Todmorden.—*J. Nowell, Wils. Bry. Brit.*

1893. Stone Booth, Crimsworth Dean; 1900. Hardcastle, in fruit.—*J. Needham.*

**Plagiothecium silesiacum**, B. & S. [*Needham.*

1898. On wet stones, Weting, Crimsworth Dean.—*J.*

**Plagiothecium denticulatum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton.* 1838. Woods, frequent.—*Herb. Leyl.* [*Brit.*

Banks in woods near Todmorden.—*Herb. Nwl., Wils. Bry.*

Common, especially in woods, about the base of rocks, roots of trees, and moist banks. Stations very numerous, from Tag Lock, 200ft., to 1100ft. in Greave Clough, Wadsworth.

**Plagiothecium sylvaticum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton.* 1888. Near Halifax.—*W. West, Lees' Fl.*

1897. Bessie House, Wadsworth.—*J. Needham*.

Much less common than the preceding; North Wood, Coley; Ogden Clough; Colden Clough; Turner Clough.

Var. **succulentum**, Wils.

Shady woods near Todmorden.—*Herb. Nwl.*

**Plagiothecium undulatum**, (L.) B. & S. (*Hypnum*, L.)

High Greenwood.—*Herb. Nwl.* [H.T.S. !]

1892. Hardcastle.—*J. Needham*. North Dean Wood.—

**Plagiothecium latebricola**, (Wils.) B. & S. (*Leskea*, Wils.)

On the roots of decayed oaks, Stanelly Clough.—*Herb. Nwl.*

1854. Same station, "very rare."—*J. Nowell, Supp.*

1855. Near Todmorden.—*J. Nowell, Wils. Bry. Brit.*

1888. Stanelly Clough.—*A. Stansfield, Lees' Fl.*

**Amblystegium serpens**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton*. On old walls, Todmorden.—*Herb. Nwl.*

Common on damp rocks, walls, tree stumps, etc.: Hebden Bridge.—*J. Needham*. Elland Park Wood; North Wood, Coley; Binnroyd Clough; Parrock Clough, etc. !

**Amblystegium Juratzkæ**, Schimp.

1901. On beech-tree stump, Weting, Crimsworth Dean; a new Yorkshire record, *teste H. N. Dixon*.

**Amblystegium varium**, (Hedw.) Lindb. (*Leskea*, Hedw.)

1892. On wall, Pecket Wood; 1896. Midge Hole Road, Hebden Bridge.—*J. Needham*.

**Amblystegium filicinum**, (L.) De Not. (*Hypnum*, L.)

1775. *J. Bolton*.

1843. Carr Green, Erringden.—*Herb. Leyl.*

Marshy places near Todmorden.—*Herb. Nwl.*

High Greenwood; on the scar, Hardcastle, in fruit, rare in this condition; near Foster Mill, Hebden Bridge.—*J. Needham*. North Wood, Coley.—*W. B. Crump*. Pond near the stearine works, Norland.—*J. T. Aspin*. Sever-hills Clough, etc. !

**Hypnum riparium**, L. (*Amblystegium*, B. & S.)

1775. *J. Bolton*.

Near Stoodley Pike.—*H. T. Soppitt*. Hardcastle.—*J. Needham*. Tag Lock; Graining Water, Wadsworth !

**Hypnum stellatum**, Schreb.1840. Widdop.—*S. Gibson, Baines' Fl.*1888. Todmorden.—*A. Stansfield, Lees' Fl.***Hypnum uncinatum**, Hedw. (*H. aduncum*, L. ; *Amblystegium aduncum*, Lindb.)1775. *J. Bolton*. Boggy moors, frequent.—*Herb. Leyl.*Hebden Valley.—*Herb. Nwl.*; 'rare'—*A. Stansfield, Lees' Fl.*1892. Pecket Wood ; Hardcastle.—*J. Needham*.

So much confusion prevailed among the older authors between *H. aduncum*, L. = *H. uncinatum*, Hedw.; and *H. aduncum* (non L.) Hedw. = *H. Kneiffii*, Schp., that it is scarcely safe to say which species the *H. aduncum* recorded by Bolton, really is. After considering the synonymy, and examining Nowell's and Leyland's specimens it was decided to place all three records here.

Forma **plumosa**, Ren. (var. *plumosum*, Schimp.)

Pecket Wood, on rocks ; Hardcastle, in fruit.—*J. Needham (The Naturalist, March 1901, p. 75)*. This form is commoner than the type about Hebden Bridge.

Var. **plumulosum**, Schimp.

Among other mosses on damp rock, Pecket Wood ; on the Scar, Hardcastle.—*J. Needham (The Naturalist, March 1901, p. 76)*. There are intermediate forms between the type and these two varieties. *J. A. Wheldon* remarks on one, "*H. uncinatum* between type and f. *plumosa* Ren., nearest the latter ; one of the plants which proves Renauld is right in reducing var. *plumosum* to a mere forma."

**Hypnum fluitans**, L.1840. In fruit, Stansfield Moor.—*Baines' Fl.*Redmires, Stansfield Moor.—*Herb. Leyl.* ; *Herb. Nwl.*

In *Wils. Bry. Brit.* the author remarks, "a variety with suberect capsules has been gathered by Nowell on Stansfield Moor."

1888. Heptonstall Moor.—*A. Stansfield, Lees' Fl.*Group. **amphibium**, Ren.var. **Jeanbernati**, Ren.

1890. In rill, Gibb Slack Moor, Wadsworth ; in

shallow pool, Crimsworth Dean.—*J. Needham!* (*The Naturalist*, March 1902, p. 77). On boulder in stream, Reaps Water.

Forma **Hollerii**, (Sanio) Ren.

1898. Hardcastle.—*J. Needham*.

Var. **atlanticum**, Ren. (Jour. Bot., 1901).

Foster Clough, Midgley; bank of moorland pool, Reaps; Booth Dean; Midgley Moor (a form?); Turner Clough; Parrock Clough!

Forma **elongata**.

1900. Swamp, Erringden Moor; a transition to the var. *Jeanbernati*.

Var. **gracile**, Boul.

1893. Near the canal, Elland! 1901. Greave Clough.—*W. B. Crump*.

Var. **setiforme**, Ren.

1900. Flints reservoir, Soyland, a wholly submerged form approaching var. *gracile*, abundant.—*J. T. Aspin!* (*The Naturalist*, March 1902, p. 80). The first British record; since met with in West Lancashire by A. Wilson of Ilkley.

Group **falcatum**, Ren.

Var. **falcatum**, Schimp.

1897. Near the dams, Crimsworth Dean; Woodhey, Erringden Moor.—*J. Needham!* (*Naturalist*, March 1902, p. 81.) 1900. Swamp, Erringden Moor, a form approaching var. *ovale*, Ren. The *Amblystegium aduncum* (L.) Lindb., var. *plumosum*, B. & S., Hebden Bridge (*Needham*, 1897), *Brit. Moss Fl.* iii. 47, belongs here.

Var. **ovale**, Ren., MS.

1900. On rock, river side, Tippett-holm, near Hardcastle.—*J. Needham*. 1901. Booth Dean, Rishworth; Withens, Cold Edge; Ogden Clough; Crimsworth Dean, a very fertile plant, the affinities of which are rather doubtful! Dam bank, Crimsworth Dean (*J. Needham*), a form partaking somewhat of the characters of the group *amphibium* in the colour of the peristome!

Group **exannulatum**, Ren. (*H. exannulatum*, Gümbr.)

Langfield.—*Herb. Nwl.*

1888. Todmorden.—*A. Stansfield, Lees' Fl.*

Var. **pinnatum**, Boul.

1901. Saltonstall Moor, swamp near Catty Well.—

*J. T. Aspin!* Greave Clough.—*W. B. Crump.*

Forma **montana**, Ren.

Saltonstall Moor! (*Naturalist*, March 1902, p. 84).

Spa Clough!

All these varieties of *fluitans* have been checked by  
Mr. J. A. Wheldon.

**Hypnum revolvens**, Sw.

Bogs on Stansfield Moor.—*Herb. Nwl.*

1854. Langfield Moor.—*J. Nowell, Supp.*

1855. Todmorden.—*J. Nowell, Wils. Bry. Brit.*

Forma **typica**, Ren.

Todmorden.—*Nowell (J.A.W., Nat., Mar. 1902, p. 88.)*

**Hypnum commutatum**, Hedw.

Woods, frequent.—*Herb. Leyl.*

Wet banks, near Todmorden.—*Herb. Nwl.*

1889. Ogden Clough.—*G. L. Lister.*

Hardcastle, Crimsworth Dean, Luddenden Dean, and a  
few other places on dripping rocks, or shale banks!

**Hypnum falcatum**, Brid.

1900. On dripping bank, North Dean Wood!

**Hypnum cupressiforme**, Dill.

1775. *J. Bolton.* Woods, frequent.—*Herb. Leyl.*

Common in the Hebden Valley and Crimsworth Dean.—*J. Needham.* Colden, Ogden, and Butts Cloughs; North Wood, Coley!

Var. **resupinatum**, Schimp.

Todmorden.—*Herb. Nwl.*

1868. Fixby.—*C. P. Hobkirk, 'Huddersfield.'*

Var. **ericetorum**, B. & S.

1901. Greave Clough.—*W. B. Crump.*

Var. **tectorum**, B. & S.



1900. Road side, Hardcastle—*J. Needham*.

An unnamed form was gathered in compact cushions on a dry rock near Lumb Mill, Colden Clough,

1901. A similar form has been met with in W. Lancashire by Mr. Wheldon.

**Hypnum Patientiæ**, Lindb.

1854. Damp banks, Harley Wood—*J. Nowell, Supp.*

1888. Harley Wood—*A. Stansfield, Lees' Fl.*

**Hypnum molluscum**, Hedw.

Woods near Halifax in a barren state, frequent—*Herb. Leyl.*

1892. Lumb Fall and Stone Booth, Crimsworth Dean—*J. Needham*.

**Hypnum palustre**, L.

1775. *J. Bolton*.

Stones in rivulets near Todmorden—*Herb. Nwl.*

Stream sides at Hardcastle and High Greenwood; near Foster Mill, Hebden Bridge, a robust form attached to the stones in the river; Lumb Fall—*J. Needham!* Road side rill near Luddenden; Luddenden Dean, several places; Turner Clough; Parrock Clough, etc.!

Var. **tenellum**, Schimp.

1896. Above Lumb Fall—*J. Needham*.

**Hypnum ochraceum**, Turn.

Stones in the stream, High Greenwood—*Herb. Nwl.*

1854. Abundant on wet stones in the moorland rivulets near Todmorden. In fruit on dripping rocks in Gorple Clough—*J. Nowell, Supp.*

1888. Gorple Clough—*A. Stansfield, Lees' Fl.*

1901. Spa Clough; Graining Water Valley, Widdop; Colden Clough; Beaumont Clough; Hardcastle—*J. Needham*. The type is somewhat rare about here.

Var. **flaccidum**, Milde.

The var. is exceedingly common in this district, occurring, more or less, in every clear rill and stream throughout the parish; it also frequents well troughs, etc.

**Hypnum scorpioides**, L.

1775. *J. Bolton*.

1888. Stansfield, very rare—*A. Stansfield, Lees' Fl.*

**Hypnum stramineum**, Dicks.

1840. Midgley Moor—*S. Gibson*. Common on Stansfield Moor, but always barren—*J. Nowell, Baines' Fl.*

1854. Bogs and sides of streams at Langfield and Stansfield Moors; fruiting rarely—*J. Nowell, Supp.*

1888. Stansfield and other moors—*A. Stansfield, Lees' Fl.*

1898. Tippett-holme; Hippins Clough; Crimsworth Dean, etc.—*J. Needham*. In swamps among Sphagnum, etc., Booth Dean, Norland Moor, Widdop, Saltonstall Moor, Ogden and High Lee Cloughs, etc.! Some books state it to be rare; it is not so here.

**Hypnum cordifolium**, Hedw.

Royd Hills near Todmorden—*Herb. Leyl.*

1840. Moors in the Vale of Todmorden—*Baines' Fl.*

1900. Tag Lock, in quantity—*T. Halstead*. Pond near the Stearine works, Norland! Graining Water—*W. B. Crump*. Not common.

**Hypnum cuspidatum**, L.

1775. *J. Bolton*. Bogs, etc.; frequent—*Herb. Leyl.*

Marshy places near Todmorden—*Herb. Nwl.*

Very common on dripping banks, stream sides, marshy places in fields, etc.

**Hypnum Schreberi**, Willd.

1840. Ogden Clough; Turner Clough, etc.—*Baines' Fl.*

High Greenwood—*Herb. Nwl.* [*Lees' Fl.*

1888. Todmorden, Hebden Bridge, Luddenden Foot—

**Hylocomium splendens**, (Hedw.) B. & S.

1888. Todmorden—*A. Stansfield, Lees' Fl.*

**Hylocomium brevirostre**, B. & S.

1834. High Greenwood—*Herb. Leyl.*

1888. Hebden Valley, very rare—*T. Stansfield, Lees' Fl.*

**Hylocomium loreum**, (L.) B. & S.

Woods, frequent—*Herb. Leyl.*

1888. Hebden Bridge; Todmorden—*A. Stansfield, Lees' Fl.*

1896. Hardcastle—*J. Needham*.

**Hylocomium squarrosum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton*. [Lees' *Fl.*  
 1888. Growing scarcer about Todmorden—*A. Stansfield*,  
 1893. Hardcastle; 1898. Crimsworth Dean, both in fruit  
 —*J. Needham*. Ogden Clough!

**Hylocomium triquetrum**, (L.) B. & S. (*Hypnum*, L.)

1775. *J. Bolton*.  
 1840. Woods, very frequent—*Baines' Fl.*  
 1888. Todmorden—*A. Stansfield*, *Lees' Fl.*  
 This species has not been met with recently.

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## HEPATICÆ.

*INTRODUCTION.*

THE greater part of the introduction to the Moss-Flora applies equally to the Hepaticæ. Bolton's records form the basis of the following list. He enumerated twenty-nine or thirty species, two being included under the mosses. They were mostly first records for the county, and nearly all have been recently confirmed. So far as we know, the next published records are contained in "A List of Musci and Hepaticæ of Yorkshire," by the late Dr. Spruce, in the "Phytologist," Vol. ii. pp. 147-157, (1845). These were communicated to Spruce by J. Nowell, from the Todmorden district. Unfortunately this list was overlooked when the Moss-Flora was compiled. Leyland's Herbarium contains thirty species also supplied by Nowell, who continued to add to our knowledge of the local and county distribution of these beautiful but minute plants. Subsequent lists are to be found in the West Riding Floras of Miall and Carrington, and of F. A. Lees. A few are recorded in C. B. Hobkirk's History of Huddersfield, 1868, and in Pearson's List of Yorkshire Hepaticæ, "Nat." 1876. The Messrs. T. & A. Stansfield, Todmorden, H. F. Parsons, and others, contributed many records for the Calder area to Lees' Flora.

When the latter flora was published the number of Hepatics given for the Riding was 108. The present list contains 70 for the parish and includes one new to Yorkshire, three to the West Riding, and five to the Calder drainage area. Probably this number will be added to by future investigators. The district being largely subalpine, with great stretches of wet moorland, and many moist, wooded cloughs, is very suitable for this class of plant.

I have adopted the classification and terminology used by W. H. Pearson in his finely illustrated work "The Hepaticæ of the British Isles," (Lovell Reeve & Co., 1899-1902). This has been done the more readily because Pearson's great work is likely to be the standard one, for many years to come, in this branch of systematic botany. Symes M. Macvicars' very useful "Key to the British Hepaticæ" is on the same lines. The arrangement differs a little from that of preceding floras, and from the London Catalogue of British Mosses and Hepaticæ, 1881, also from Canon Lett's Hepatics of the British Islands, 1902.

My thanks are due to Messrs. M. B. Slater, Malton, W. H. Pearson, Manchester, and S. M. Macvicar, Invermoidart, for kind aid in determining critical species; and to Messrs. J. Needham and J. T. Aspin for assistance in collecting.

C. CROSSLAND.

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#### ABBREVIATIONS AND SIGNS EMPLOYED.

The same as in the Moss-Flora with the following additions:

*Phyt.*—The Phytologist, Vol. II., 1845.

*Hist. Hudd.*—C. P. Hobkirk's History of Huddersfield.

*Nat.*—The Naturalist.

*Spr. Ceph.*—Dr. Spruce "On Cephalozia," Malton, 1882.

*Frs. Br. Hep.*—Pearson's Hepaticæ of the British Isles.

JUNGERMANIACEÆ.

JUBULEÆ.

**Frullania tamarisci**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton. Catalogue Hx. Plants, No. 303.*

1898. Hardcastle.—*J. Needham.*

**Frullania dilatata**, (L.) Nees. (*Jungermania*, L.)

1775. *J. Bolton, Cat., No. 302.* Not met with recently.

**Jubula Hutchinsiae**, (Hook.) (*Jungermania*, Hook.)

1896. Hardcastle, in streamlet near the river, plentifully—*J. Needham, "Nat." Ap. 1897.* First Yorkshire Record. This species was originally found in the S.W. of Ireland by Miss Hutchins, in 1814. Up to the present time it has only been met with in eight other stations in the British Isles. The only other Yorkshire locality is Raven gill, Pateley Bridge, *Nat. Nov. 1897.* It is found in North and South America, and in the Pacific Islands.

**Lejunia serpyllifolia**, (Dicks.) Lib. (*Jungermania*, Dicks.)

1888. Todmorden district,—*A. Stansfield, Lees' Fl.*

JUNGERMANIEÆ.

**Radula complanata**, (L.) Dum. (*Jungermania*, L.)

1875. *J. Bolton, Cat. No. 301.*

Harley Wood, near Todmorden, rare.—*Herb. Leyl.*

**Porella platyphylla**, (L.) Lindb. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 304.*

**Blepharozia ciliaris**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 305.*

On the moors, frequent.—*Herb. Leyl.*

1845. Stansfield Moor.—*J. Nowell, Phyt.*

1888. Stansfield Moor.—*A. Stansfield, Lees' Fl.*

**Trichocolea tomentella**, (Ehrh.) Nees.

1888. Stansfield Moor, not common.—*A. Stansfield, Lees' Fl.*

1901. Turner Clough, Rishworth; plentiful near the *Trollius europæus* bed.—*J. T. Aspin!*

**Blepharostoma trichophylla**, (L.) Dum.

1888. Near Todmorden.—*A. Stansfield, Lees' Fl.*

**Lepidozia reptans**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 300.*

1862. Near Todmorden.—*J. Nowell, M. & C. Fl.*

1888. Hebden Valley; North Dean;—*H. F. Parsons, Lees' Fl.*  
Not uncommon: Hardcastle, Foulds' Hill, Hebden Hip-  
pins, and one or two other places in the Hebden Valley.  
—*J. Needham.* Parrock Clough, Erringden.—*J. T. Aspin.*  
Luddenden Dean.—*A. Robertshaw.* Jackson Ridge.—*W.*  
*B. Crump.* Ogden Clough; Rough Hey Wood, Norland;  
North Dean Wood; Midgley Moor, etc.!

**Lepidozia setacea**, (Web.) Mitt.

Stansfield Moor.—*Herb. Leyl.*

1862. Moist woods near Todmorden.—*J. Nowell, M. & C. Fl.*

1888. Harley Wood.—*T. Stansfield*; Stansfield Moor, scarce.  
—*A. Stansfield, Lees' Fl.*

North Dean Wood; Parrock Clough, Erringden!

**Bazzania trilobata**, (L.) Gr. & B. (*Jungermania*, L.)

1836. Robin Wood, near Todmorden, rare; 1843. High  
Greenwood.—*Herb. Leyl.*

1845. Near Todmorden.—*J. Nowell, Phyt.*

1888. Hebden Valley.—*A. Stansfield, Lees' Fl.*

**Kantia Trichomanis**, (L.) Gr. & B. (*Mnium Trichomanis* and  
*M. fissum*, L., Sp. Pl., p. 1579; *Calypogeia Trichomanis*,  
Corda.)

1775. *J. Bolton, Cat. Nos. 217, 218.*

1862. Todmorden.—*J. Nowell, M. & C. Fl.* A form in  
Stansfield's Nursery, Todmorden, is recorded as var. *fissa*.  
Near Fixby.—*H. P. Hobkirk, Hist. Hudd.*

1888. North Dean.—*H. F. Parsons*; Hebden Valley. *F. A.*  
*Lees, Lees' Fl.* Very common on moist, shaded banks:  
stations where met with recently too numerous to detail.

**Kantia Sprengelii**, Mart.

1900. High Lee Clough, Norland; North Wood, Coley.

1901. In swamp, Broadhead, Erringden.—*J. T. Aspin!*  
First records for the Calder drainage. "Somewhat rare;  
probably often mistaken for *K. Trichomanis*." *Prs. Br. Hep.*

**Kantia arguta**, (Mont et Nees.) Lindb.

1897. Near the "Fisherman's Hut," Hardcastle.—*J. Needham*. 1900. Rough Hey Wood, Norland! 1901. Graining Water-side near Widdop.—*J. T. Aspin*! First records for the Calder drainage. This sp. may have been overlooked as a small form of *Lophocolea bidentata*, which it much resembles. Our first intimation of its existence here was the finding by M. B. Slater of a few branches mixed with another hepatic sent him by Needham.

**Cephalozia catenulata**, (Hübner.) Spruce (*Jungermania*, Hübner.)

1862. Harley Wood.—*J. Nowell*, *M. & C. Fl.*

**Cephalozia bicuspidata**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton*, *Cat. No. 295*.

1888. Todmorden.—*A. Stansfield*; North Dean Wood.—*H. F. Parsons*, *Lees' Fl.* Very common both in the valleys and on the higher moorlands.

**Cephalozia Lammersiana**, (Hübner.) Spruce.

Hardcastle (1893), Crimsworth Dean, Hippins Clough.—*J. Needham*. Parrock Clough, Erringden; Rough Hey Wood, Norland; Ellistones, Greetland! Ogden Clough; Colden Clough; from the sides of a disused water-trough, Heptonstall.—*J. T. Aspin*. A much more robust plant than *C. bicuspidata*. First records for Calder Valley.

[**Cephalozia connivens**, (Dicks.) Spruce.

Near Todmorden.—*J. Nowell*, *Lees' Fl.* Nowell's specimens were gathered in Shedden Clough, in Lancashire.]

**Cephalozia curvifolia**, (Dicks.) Dum. (*Nowellia*, Mitt.)

1882. Near Todmorden.—*J. Nowell*; *Spr. Ceph.*

The lobule on the lower side of the leaf in this species induced Mr. Mitten to remove it from *Cephalozia* and to create a new genus (*Nowellia*) for it. Dr. Spruce, however, in his work "On Cephalozia and Allied Genera" does not consider this feature, although "not shared by any other true *Cephalozia*," of sufficient value to separate it from this genus, especially as it is not absolutely constant.

**Cephalozia Sphagni**, (Dicks.) Spruce. (*Jungermania*, Dicks.)

1842. Stansfield Moor, rare.—*J. Nowell*, *Herb. Leyl.*

Stansfield Moor.—*J. Nowell*, (*Sphagnæcetes communis* N. & E). *M. & C. Fl.*



**Cephalozia divaricata**, (Smith), Dumort.

1888. About Todmorden, tolerably common.—*A. Stansfield, Lees' Fl.*

**Scapania resupinata**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 298.*

**Scapania nemorosa**, (L.) Dum. (*Jungermania*, L.)

1888. Todmorden—*A. Stansfield, Lees' Fl.*; *Prs. Br. Hep.*

**Scapania undulata**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 297.*

1888. North Dean—*H. F. Parsons*; Gorples—*J. Nowell*; Rishworth Valley—*Lees' Fl.*

An extremely common and most variable plant. It varies both in size, colour, and leaf margin. It inhabits well-troughs, road-side horse-troughs, Sphagnum swamps, etc., and grows on the rocks and boulders in every clear rill and streamlet in the parish, from source to outlet.

A form with cells walls thicker than usual, approaching those of *S. irrigua*, and shape of leaf approaching *S. purpurescens* was found in 1901 in great beds on Erringden Moor; and a purple form resembling *purpurescens* in Reaps Water Valley—*J. T. Aspin!*

Some continental authors have made a number of vars. (*vide Nees, "Eur. Leber."*); English students, so far, have not considered it necessary.

**Scapania purpurescens**, (Hook.) Tayl. (*S. purpurea*, Carr).

1888. Plentiful in bogs amid grass and *Sphagnum*, above the Derby Inn, Rishworth Valley—*F. A. Lees, Lees' Fl.*

It is just possible this record represents a purple form of *S. undulata*.

**Diplophyllum albicans**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 299.* Very common—*Herb. Leyl.*

Common, noted in numerous stations.

**Lophocolea bidentata**, (L.) Nees. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 294.* Frequent—*Herb. Leyl.*

1868. Grimscar Wood—*C. P. Hobkirk, Hist. Hudd.*

Scar, Hardcastle—*J. Needham.* Elland Park Wood; North Dean Wood; Ogden Clough; Butts Clough; North Wood, Coley; Parrock Clough; on soil in plant-pot, cold fern-house, Well Head, etc.!

**Lophocolea cuspidata**, Limp.

1898. Scar, Hardcastle—*J. Needham*. Among *Mnium hornum*, Ellistones, Greetland; North Dean Wood, 1900!  
First records for the W. Riding.

**Lophocolea heterophylla**, (Schrad.) Dumort. [*Hudd.*

1868. Jagger Green, near Stainland—*C. P. Hobkirk, Hist.*  
1897. Hardcastle—*J. Needham*. Woods near Butts Clough, Rishworth; North Wood, Coley!

**Chiloscyphus polyanthos**, (L.) Dum. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 292.*  
1836. Dungeon Wood, near Todmorden—*Herb. Leyl.*  
1888. Harley Wood—*A. Stansfield, Lees' Fl.*

Not uncommon: Lower Hebden; Gibson Mill, etc., Hardcastle, 1893—*J. Needham*. In well-trough, Priestley Green, Coley—*W. B. Crump*. Crimsworth Dean; in well, Midgley; Shibden; damp wall, Ripponden Bank, etc.!

A form nearer to Var. **rivularis**, Nees., than to the type was found in running-water, Hardcastle, 1901—*J. Needham*.

**Mylia Taylori**, (Hook.) Gr. and Benn. (*Jungermania*, Hook.)

1842. Woods near Todmorden—*J. Nowell, Herb. Leyl.*  
1845. Near Todmorden—*J. Nowell, Phyt.*  
1888. Stansfield—*A. Stansfield, Lees' Fl.*

**Mylia anomala**, (Hook.) Gr. and B. (*Jungermania*, Hook.)

1842. Stansfield Moor, rare—*J. Nowell, Herb. Leyl.*  
1862. Stansfield Moor—*J. Nowell, M. & C. Fl.; Prs. Br. Hep.*

**Plagiochila asplenioides**, (L.) (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 290.*  
1888. Todmorden district—*A. Stansfield, Lees' Fl.*

**Plagiochila spinulosa**, (Dicks.) Dumort. (*Jungermania*, Dicks.)

1842. Gorpley (? Gorple) and Stiperden Cloughs—*H. Leyl.*  
1845. Stiperden Clough—*J. Nowell, Phyt.*; *A. Stansfield, Lees' Fl.*  
1898. Old Syke Clough, Hardcastle—*J. Needham*. 1901.  
Colden Clough!

**Liochlaena lanceolata**, (L.) (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 293.*

**Jungermania pumila**, With.

1888. Todmorden—*A. Stansfield, Lees' Fl.*

**Jungermania riparia**, Tayl. (*Apolozia*, Dumort.)1842. High Greenwood—*Herb. Leyl.*1892. High Greenwood—*J. Needham*; 1901. Colden Clough!  
Cragg Vale—*J. T. Aspin.***Jungermania sphærocarpa**, Hooker,1836. Common in the ravines in the vale of Todmorden—  
*Herb. Leyl.*1845. Harley Wood, Todmorden, where Nowell gathered  
it in a fine state of fructification—*Spruce, Phyt.*1880. Todmorden—*G. A. Holt, Lees' Fl.***Jungermania crenulata**, Smith.Common near Todmorden—*Herb. Leyl.*Todmorden—*J. Nowell, Lees' Fl.***Jungermania inflata**, Huds. (*Gymnocolea*, Dumort.)1842. Stansfield Moor—*J. Nowell, Herb. Leyl.*; *M. & C. Fl.*Common: grows in densely matted, spreading patches in  
marshy places, and on the sides of shallow, moorland  
pools; occasionally floating. A few of the places where  
recently noted are Stansfield, Heptonstall, Midgley,  
Erringden, and Gibb Slack (Wadsworth) Moors; Parrock  
Clough; Luddenden Dean; Crimsworth Dean, etc.!**Jungermania capitata**, Hooker.1888. Ripponden Woods—*Lees' Flo.***Jungermania ventricosa**, Dicks.1862. Heptonstall—*J. Nowell, M. & C. Fl.* First noticed  
by Nowell in 1842.1901. Reaps Water-side; Greave Clough; on wall, Horse  
Clough, and near Hollin Hall, Crimsworth Dean—  
*J. Needham.***Jungermania Lyoni**, Taylor (*J. quinquedentata*, W. & M.)1775. *J. Bolton, Cat. No. 296.* This record may refer to  
*J. barbata*, Schreb.1862. Near Todmorden—*J. Nowell, M. & C. Fl.*1888. Old walls (Todmorden), common—*A. Stansfield, Lees'*  
*Fl.*; *Prs. Br. Hep.***Jungermania gracilis**, Schleich. (*J. attenuata*, Lindb.)1888. Ripponden to Rishworth—*Lees' Fl.*

1900. On stony bank, and on wall, Wade Wood ; Parrock Clough ! 1901. Crimsworth Dean—*J. Wms. Sutcliffe*. Hardcastle. 1902. Hebden Hippings—*J. Needham*.

***Jungermania barbata***, Schreb. (*J. barbata* var. *Schreberi*, Nees).

1845. Near Todmorden—*Herb. Leyl.* ; *J. Nowell, Phyt.*  
1879. Hebden Bridge—*W. West, Y. N. U. Bot. Rep.*

***Jungermania lycopodioides***, Wallr. Var. ***Flærkii*** (W. & M.)  
(*Jungermania Flærkii* Web. & Mohr).

1862. Near Todmorden—*W. Wilson, M. & C. Fl.*  
1880. Todmorden—*G. A. Holt, Lees' Fl.*  
1896. Frost Hole, Erringden ; 1900 Midgley Moor ;  
1901 Ogden Clough ; 1902 Luddenden Dean ! A form  
of this sp. approaching *J. gracilis*, was gathered by W. B.  
Crump in Greave Clough, Oct. 1900.

***Jungermania minuta***, Crantz.

Robin Wood, near Todmorden—*Herb. Leyl.*  
1845. Todmorden—*J. Nowell, Phyt.*

***Nardia hyalina***, (Lyell) Carr. (*Jungermania*, Lyell ; *Apolozia*,  
Dumort ; *Eucalyx*, Lindb.)

1876. Hebden Bridge—*G. E. Hunt, Nat.* ; *Lees' Fl.*  
1897. Stanelly Clough—*H. T. Soppitt, J. Needham !* 1900.  
Hardcastle ; Tippet-holme—*J. Needham*. Luddenden  
Dean—*A. Robertshaw !* Hey Clough, Stainland—*J. E.*  
*Crowther*. Binnroyd Clough ! Strines, Stansfield ; Ogden  
Clough—*J. T. Aspin*. Parrock Clough ; Turner Clough ;  
Cragg Vale ! Frequent : grows in fairly large patches on  
rocks in running water, and on wet shaded banks near  
streams.

***Nardia obovata***, (Nees.) Carr.

1889. Cromwell Wood, Southowram ! 1898. On dripping  
rocks, Weting, Crimsworth Dean ; Hardcastle—*J. Need-*  
*ham*. 1900. Parrock Clough ! First W. R. records.

***Nardia compressa***, (Hook.) Gr. & B. (*Jungermania*, Hook.)

Gorple Clough—*Herb. Leyl.*  
1845. Rivulets on Stansfield Moor, c.fr.—*J. Nowell, Phyt.*  
1880. Near Todmorden—*G. A. Holt* ; 1881 Rishworth  
Valley—*Lees' Fl.* 1896 High Lee Clough—*H. T. Soppitt* ;  
1901 Wet rocks, Turner Wood.

**Nardia scalaris**, (Schrad.) Gr. & B. (*Jungermania*, Schrad. ; *Alicularia*, Corda).

Frequent near Todmorden—*Herb. Leyl.*

1862. Frequent near Todmorden—*J. Nowell, M. & C. Fl.*

1888. Norland Moor—*H. F. Parsons* ; Rishworth—*Lees' Fl.*

1898. Crimsworth Dean—*J. Needham*. 1900 Butts Clough, Rishworth ; 1901 Ogden Clough : 1902 Luddenden Dean !

**Nardia silvrettæ**, (Gottsche) Prs. Br. Hep. (*Alicularia minor*, 1900. Butts Clough, Rishworth ! [Limp.

*Prs. Br. Hep.* contains a record under "Gorphey Clough, Todmorden, Lancs.—*G. A. Holt*. Probably Gorphey is intended. In *Brit. Moss Fl.* there is a record by Holt of *Blindia actua*, var. *trichodes*, Gorphey Clough, 1880. First West Riding records.

**Marsupella emarginata**, (Ehrh.) Dumort. (*Jungermania*, Ehrh. ; *Nardia*, Gr. and B.)

1836. Stiperden Clough—*Herb. Leyl.*

1888. Beaumont Clough—*A. Stansfield, Lees' Fl.*

**Saccogyna viticulosa**, (L.) (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 291.*

1896. Hardcastle Hill, creeping among *Thuidium tamariscinum* ; Hebden Valley, among *Sphagnum*—*J. Needham*.

1901. Ogden Clough ; Crimsworth Dean ; Saltonstall Moor-edge, near Catty-Well, among *Sphagnum*, etc. !

The specimens in *Herb. Leyl.* (1836) are from Millens Clough, Dulesgate, Todmorden. Nowell's record in the *Phyt., M. & C. Fl.*, and *Lees' Fl.* is for this station, which is on the Lancashire side of the County boundary.

**Fossombronina pusilla**, (Dill., L.) Dumort. (*Jungermania*, L.)

1836. In a field at Bank Farm near Todmorden—*J. Nowell, Herb. Leyl.*

1862. Near Todmorden—*J. Nowell, M. & C. Fl.*

1888. Royd Hill—*A. Stansfield, Lees' Fl.*

**Blasia pusilla**, Mich., L. (*Jungermania*, Hooker.)

1775. *J. Bolton*. Not numbered in Cat. Of this species Bolton remarks, " This being so very rare and curious a Plant, it may not be amiss to give the places where I have found it. . . At the bottom of Binn Royd Clough upon

the Norland side : also near the end of the Hippings at Copley's mill towards Norland, within six yards of the end."

1778. Halifax—*Bolton, Hudson's Fl., 2nd. Ed.*

1836. Wet scars above farm in Harley Wood—*Herb. Leyl.*

1845. In fruit in Harley Wood near Todmorden—*J. Nowell, Phyt.* [*Fl.*]

1888. Pennant Clough, Hebden Valley—*A. Stansfield, Lees'*

**Pellia epiphylla**, (L.) Lindb. (*Jungermania*, L.)

1775. *J. Bolton.*

Common and abundant on the sides of damp cloughs, especially in recesses, and on wet, shaded banks. A few of the places where it has been noted are Brookhouses, Ovenden ; Elland Park Wood ; Butts Clough ; Binnroyd Clough ; Fiddle Wood, Kebroyd ; High Lee Clough ; Luddenden Dean ; Severhills Clough, etc.

**Pellia calycina**, (Tayl.) Prs. Br. Hep. (*Jungermania*, Tayl.)

1896. Crimsworth Dean—*J. Needham.* First record for the Calder drainage area.

**Aneura multifida**, (L.) Dumort. (*Jungermania*, L.)

1836. Bank Farm, near Todmorden—*Herb. Leyl.*

1888. Mytholm Clough, Todmorden, &c.—*J. Nowell, A. Stansfield, Lees' Fl.*

1893. On rocks in stream, Hardcastle, and Howden Hole ;  
1896 High Greenwood, in fruit—*J. Needham.* Luddenden Dean—*J. Wms. Sutcliffe.* 1897 Stainland—*H. T. Soppitt.*  
1900 Saltonstall Moor, among *Sphagnum*, etc. 1901 Booth Dean !

**Aneura pinguis**, (L.) Dumort. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 308.*

1901. Crimsworth Dean—*W. B. Crump.* In swamp, Saltonstall Moor—*J. T. Aspin!* The thick, nerveless, fleshy fronds have a peculiar greasy feel somewhat like the leaves of *Pinguicula vulgaris.*

**Metzgeria furcata**, (L.) Radd. (*Jungermania*, L.)

1775. *J. Bolton, Cat. No. 309.*

1888. Staups Clough, &c. — *A. Stansfield ; Rishworth Valley—Lees' Fl.*

1896. Hardcastle Hill. 1902. In clough, High Greenwood; and near the "Fisherman's hut"—*J. Needham*.

MARCHANTIACEÆ.

**Marchantia polymorpha**, Linn.

1775. *J. Bolton, Cat. No. 310.*

1841. In the gardens, Well Head—*Herb. Leyl.*

1862. Near Todmorden—*J. Nowell, M. & C. Fl.*

1893. Midgehole road, both male and female plants in great abundance. North Dean Wood; North Wood, Coley; Spa Clough, Booth Dean; Severhills Clough; Crimsworth Dean; cold fern-house, Well Head, etc. etc.! Common.

**Conocephalus conicus**, (L.) Dumort. (*Marchantia*, L.; *Fegatella*, Corda.)

1775. *J. Bolton, Cat. No. 312.*

Common on wet rocks, shale, and earth in moist cloughs. It has been noted at many places about Hardcastle, in Crimsworth Dean; Binnroyd Clough; North Wood, Coley; Cragg Vale; cloughs in Booth Dean, etc. etc.!

**Preissia commutata**, (Lindenb.), Nees.

1862. New Todmorden—*J. Nowell, M. & C. Fl.*

**Lunularia cruciata**, (L.) Dumort. (*Marchantia*, L.)

1775. *J. Bolton, Cat. No. 311.* 1871. Todmorden—*Lees' Fl.*

Commonest in greenhouses, and on damp, shaded paths in gardens. I have met with it in all the local greenhouses visited.

**Riccia glauca**, L. (*Riccia glauca*, var. *minima*. Lindenb.)

1775. *J. Bolton, Cat. No. 313*, as *R. minima*.

**Ricciocarpus natans**, (L.) Corda (*Riccia natans*, L.)

1775. *J. Bolton, Cat. No. 314.*

Hebden Bridge—*S. Gibson, Prs. Br. Hep.*

**Anthoceros punctatus**, L.

1724. In a lane at Greenwood Lee, a mile from Heptonstall—*Ray's Syn.* repeated in *Martyn* (1763).



## LICHENES.

UNDER Lichens Bolton enumerates eighty-three species (Nos. 316-398), and remarks, "Beside the foregoing, there will be left with the Publisher, for the inspection of the Curious, three Prints of non-descript Lichens, containing about forty species, most of which are found in the Parish of Halifax." Probably these then "non-descripts" would be determined in after years by this persevering botanist, but, so far as we are aware, no record of them has been kept. There is a solitary example from Bolton's own collection in Herb. Leyl. but the specimen (*Parmelia glomulifera* Ach.) was gathered at Llanberris. Sixty-six of the eighty-three species can be satisfactorily traced, but the identity of the remaining seventeen has been obscured in their passage through a maze of synonyms. They are consequently omitted from this list. Many of these early records have been confirmed, mostly in the case of species which are of general, frequent, or common occurrence. But our ever increasingly impure atmosphere has been responsible for the extinction of many species in this district. These apparently robust plants, which can fasten themselves so tenaciously to bare rocks and stones and the bark of trees, are really of a very delicate nature, and do not come to perfection in a smoky locality. Some of the hardiest are still struggling on away from the towns, while others do not get beyond a rudimentary stage of their existence. In the eastern part of the parish there are practically no lichens.

Leyland's Herbarium contains between thirty and forty local species collected by S. Gibson, J. Nowell, and others. There are also upwards of 60 numbered packets containing Lichens, in a drawer, but, unfortunately, none of them are dated, localised, or named. They are simply accompanied by the following: "Lichens collected chiefly in the neighbourhood of Heptonstall by S. Gibson"; so that they are useless for the present purpose.

A few of the records are by Dr. Carrington, Mr. J. G. Baker, and others, published in Mudd's Manual of British Lichens (1861), and Leighton's Lichen Flora. Mr. T. Stansfield, Todmorden, appears to have laboured diligently at one time about Todmorden, and between 30 and 40 species are placed to his credit in Lees' Flora.

Very little work in this branch has been done during the last two decades. Mr. J. Needham and the writer have collected a few incidentally from time to time. These have been submitted for identification to Mr. Thos. Hebden, of Cullingworth, a most painstaking and reliable authority. We here tender him our thanks for his great kindness.

The classification is that of the Rev. W. A. Leighton's Lichen Flora of Great Britain and the Channel Islands, 3rd Ed., 1879. Only such synonyms are given as are necessary to identify the present terminology with that employed in Bolton's Catalogue and Leyland's Herbarium. C. C.

### COLLEMACEI.

#### COLLEMEI.

**Collema pulposum**, (Bernh.) Ach.

1900. On the ground, Midge-hole Road, Hebden Bridge—*J. Needham!* First record for Calder Valley.

**Collema crispum**, (Huds.) Ach. (*Lichen crispus*, L.)

1775. *J. Bolton, Cat. No. 341.*

**Collema nigrescens**, (L.) *Lichen nigrescens*, L.

1775. *J. Bolton, Cat. No. 351.*

### LICHENACEI.

#### SPHÆROPHOREI.

**Sphærophoron compressum**, Ach.

High Greenwood, Heptonstall—*B. Carrington, Mud. Man.*

**Sphærophoron coralloides**, Pers.

Stansfield Moor and High Greenwood—*Herb. Leyl.*

1888. Hebden Bridge Valley—*F. A. Lees.* Near Todmorden, formerly common, but now rare—*T. Stansfield, Lees' Fl.*

**Sphærophoron fragile**, Pers. (*Lichen fragilis*, L.)

1775. *J. Bolton, Cat. No. 388.*

High Greenwood—*Herb. Leyl.*

#### BÆOMYCEI.

**Bæomyces rufus**, Dc. (*Lichen rufus*, Huds.)

1775. *J. Bolton, Cat. No. 325.*

1888. Nab Wood, Todmorden—*T. Stansfield, Lees' Fl.*

**Bæomyces roseus**, Pers. (*Lichen ericetorum*, L.)

1775. *J. Bolton, Cat. No. 324.*

1888. Lanes in Stansfield—*T. Stansfield, Lees' Fl.*

**Bæomyces ichmadophilus**, (Ehrh.) Pers. (*Lecidea*, Ach.)Stansfield Moor—*Herb. Leyl.*1888. Todmorden Moors—*T. Stansfield, Lees' Fl.*

## CLADONIEI.

**Cladonia aloicornis**, (Lightf.) (*Lichen foliaceus*, Huds. I. p. 457).1775. *J. Bolton, Cat. No. 376.***Cladonia pyxidata**, Fr. (*Lichen pyxidatus*, L., Huds. I. p. 456).1775. *J. Bolton, Cat. No. 373.* Harley Wood—*Herb. Leyl.*Common, Hardcastle; Pecket Wood, etc.—*J. Needham.*  
Crimsworth Dean: Luddenden Dean; Mixenden, Rishworth, etc.!Var. **fimbriata** (Hoffm.) (*Lichen fimbriatus*, Linn., Huds.1775. *J. Bolton, Cat. No. 374.* [*I.*, p. 456.)1892. Pecket Wood—*J. Needham.*Forma **tubæformis** (*Lichen filiformis*, Huds. I., p. 456).1775. *J. Bolton, Cat. No. 375.*‘Dillenius xiv. 10, consists of the above and *Cladonia macilenta f. filiformis*. Withering's specimens are the latter, and doubtless the older botanists confounded barren specimens of the two species. Hudson however, says expressly of his *filiformis* ‘*tuberculis fuscis*’ so there can be no doubt as to what he intended’—(*J. A. Martindale*).**Cladonia gracilis**, (Hoffm.) (*Lichen gracilis*, L., Huds. I. p. 457).1775. *J. Bolton, Cat. No. 377.***Cladonia furcata**, (Hoffm.) (*L. subulatus*, Huds. I., p. 459).1775. *J. Bolton, Cat. No. 386.*Var. **racemosa**, Flk. (*L. furcatus*, Huds. I., p. 458.)1775. *J. Bolton, Cat. No. 383.*‘Dill. xvi. 27, quoted by Hudson and Withering is not entirely this variety, but it all, except one fragmentary specimen, belongs to forms of *furcata*. The spcm. in *Herb. With.* is *racemosa*’—(*J.A.M.*)Var. **spinosa**, Flk. (*L. spinosus*, Huds. I., p. 459).1775. *J. Bolton, Cat. No. 384.*‘Dill. xxi. 25, and specimens in *Herb. With. concur.*’  
—(*J.A.M.*)

**Cladonia cornucopioides**, Fr. (*L. cocciferus*, Huds. I., p. 455.  
*C. cocciferus*, var. *cornucopioides*, A & B).

1775. *J. Bolton, Cat. No. 371.* Stansfield Moor—*Herb. Leyl.*

1888. Todmorden—*T. Stansfield, Lees' Fl.*

1890. Crimsworth Dean. 1892, Hardcastle. 1903, Midgehole Road—*J. Needham.* Butts Clough, Rishworth!

Forma **phyllophora**, (*L. cornucopioides*, Huds. I. p. 456).

1775. *J. Bolton, Cat. No. 372.*

'Herb. Withering gives this form'—(*J.A.M.*)

**Cladonia digitata**, (Huds.) Hoffm.

High Greenwood—*Herb. Leyl.*

1888. Todmorden—*T. Stansfield, Lees' Fl.*

1892, Pecket Wood—*J. Needham.*

Var. **macilenta**, Hoffm. (*L. cornutus*, Huds. I., p. 458).

1775. *J. Bolton, Cat. No. 380.*

1877. Norland Moor.—*H. F. Parsons, 'The Nat.,' Sept.*

1892. Hardcastle—*W. Cash.* Pecket Wood—*J. Ndm.!*

Luddenden Dean; Mount Tabor, etc.

Forma **clavata**, (Ach.) (*L. deformis*, Huds. I., p. 458).

1775. *J. Bolton, Cat. No. 381.*

1838. Crimsworth Dean—*Herb. Leyl.*

Forma **polydactyla**, Flk., (*L. digitatus*, Huds. I., p. 457).

1775. *J. Bolton, Cat. No. 378.*

'The *C. digitata*, Herb. With. is *polydactyla*'—(*J.A.M.*)

**Cladina sylvatica**, Hoffm. (*L. rangiferinus*, L. Huds. I., p. 458).

1775. *J. Bolton, Cat. No. 382.* '*Lichen rangiferinus*, L., contained both that species and what we call *C. sylvatica*.

The latter is by far the most common in England'—(*J.A.M.*)

**Cladina uncialis**, Hoffm. (*L. uncialis*, L., Huds. I., p. 459).

1775. *J. Bolton, Cat. No. 385.*

1888. About Todmorden, formerly common, now scarce—*T. Stansfield, Lees' Fl.*

#### STEREOCAULEI.

**Stereocaulon coralloides**, Fr. (*Lichen paschalis*, Huds. I. p. 460 'pro parte, not true *L. paschalis*, Linn., which latter has only been found very sparingly among the Northern Grampians.

1775. *J. Bolton, Nat. No. 387.* Possibly included other species of *Stereocaulon*—(*J.A.M.*)

## USNEEI.

**Usnea barbata**, Dill.

Forma **florida** (L.) (*Lichen floridus*, Huds. I., p. 463).

1775. *J. Bolton, Cat. No. 398.*

High Greenwood—*Herb. Leyl.*

1888. Hebden Valley—*T. Stansfield, Lees' Fl.*

Forma **hirta** (L.) (*Lichen hirtus*, Huds. I., p. 462).

1775. *J. Bolton, Cat. No. 395.*

Forma **dasyoga** (Ach.) (*L. barbatus*, Huds. I., p. 461).

1775. *J. Bolton, Cat. No. 392.*

Forma **articulata** (*L. articulatus*, Linn., Huds. I., p. 462).

1775. *J. Bolton, Cat. No. 397.*

High Greenwood, Heptonstall—*Herb. Leyl.*

Forma **ceratina**, Schœr (*L. plicatus*, Huds. I., p. 461).

1775. *J. Bolton, Cat. No. 391.*

'Dill. xi. I., is *U. ceratina*; Herb. With. mainly *dasyoga*, one specimen *ceratina*; *U. plicata* Ach. seems confined to the Grampians, where it is scarce'—(*J.A.M.*)

## RAMALINEI.

**Alectoria bicolor**, (Ehrh.) Ach. (*L. lanatus*, Huds. I., p. 461).

1775. *J. Bolton, Cat. No. 394.*

1861. Stansfield Moor—*J. G. Baker, Mudd's Man. Br. Lich.*

**Alectoria jubata**, Nyl. (*Lichen jubatus*, L., Huds. I., p. 461).

1775. *J. Bolton, Cat. No. 393.*

1888. Todmorden—*T. Stansfield, Lees' Fl.*

**Evernia furfuracea**, Mann. (*L. furfuraceus*, Linn., Huds. I.,

1775. *J. Bolton, Cat. No. 352.* [p. 450].

'Very scarce in fruit, sent me by Alexander, from Halifax'—  
*Sir J. E. Smith, M.S. Note in Hudson's Fl. Angl., 2nd Ed.,*  
*p. 539, in Library of Linnean Soc.*

**Evernia prunastri**, Ach. (*Lichen prunastri*, L., Huds. I. p. 452.)

1775. *J. Bolton, Cat. No. 356.*

High Greenwood—*Herb. Leyl.* Hebden Valley—*T. S. Lees' Fl.*

**Ramalina calicaris**, (Hoffm.) (*Lichen calicaris*, Huds. I., p. 451).  
1775. *J. Bolton, Cat. No. 354.*

**Ramalina farinacea**, Ach. (*Lichen farinaceus*, L., Huds. I.,  
1775. *J. Bolton, Cat. No. 353.* [p. 451].  
Boston Hill, Wadsworth—*Herb. Leyl.*

**Ramalina fraxinea**, Ach. (*Lichen fraxineus*, L., Huds. I., p. 451).  
1775. *J. B., Cat. No. 355.* 1888, Todmorden—*T. S. Lees' Fl.*

**Ramalina polymorpha**, Ach.

Forma **ligulata**, Ach. (*Lichen siliquosa*, Huds. I., p. 460).  
1775. *J. Bolton, Cat. No. 390.*

'This is mainly a maritime species but forms of it grow inland. Hudson's species was founded on specimens gathered on Marlborough Downs, and the plant has been gathered on Roseberry Topping and near Thirsk'—(*J. A. M.*)

#### CETRARIEI.

**Cetraria islandica**, Ach. (*Lichen islandicus*, L., Huds. I., p. 460).  
1775. *J. Bolton, Cat. No. 347.* 'Would at least have *C. aculeata* in it'—(*J. A. M.*)

**Cetraria aculeata**, (Ehrh.) Fr. (*Cornicularia aculeata*, Ach.)  
Saltonstall Moor—*Herb. Leyl.*

1861. High Greenwood—*H. Baines, Mudd's Man. Br. Lichens.*

1879. Hebden Valley—*W. West, The Naturalist, Vol. V. p. 16.*

1892. In several places about Hardcastle—*J. Needham.*

**Platysma juniperinum**, (L.) Nyl.

Var. **pinastri** (Scop.) (*Lichen juniperinum* L., Huds. I.,  
1775. *J. Bolton, Cat. No. 358.* [p. 452].

**Platysma glaucum**, Nyl. (*Lichen glaucus*, Huds. I., p. 453).

1775. *J. Bolton, Cat. No. 359.*

1888. Hebden Valley; Todmorden—*Lees' Fl.*

1892. Near Hardcastle—*J. Needham.*

#### PELTIGEREI.

**Nephromium lusitanicum**, Schær. (*Lichen resupinatus*, Huds. I., p. 453).

1775. *J. Bolton, Cat. No. 360.* 'With probable intermixture of *N. lævigatum*. I have found both species growing together, but *N. lusitanicum* is by far the most common'—(*J. A. M.*)

- Peltigera canina**, (L.) Ach. (*Lichen caninus*, Huds. I., p. 454).  
 1775. *J. Bolton, Cat. No. 364.*  
 1879. Hebden Valley—*W. West, The Naturalist Vol. V. p. 16.*  
 1893. Hardcastle; rather common—*J. Needham.*

**Peltigera rufescens**, (Hoffm.)

1888. Todmorden, rare—*T. S., Lees' Fl.* 1896, on mossy ground, Hardcastle; 1903, Pecket Wood—*J. Ndm.*

**Peltigera horizontalis**, Hoffm. (*L. horizontalis*, Linn., Huds.

1775. *J. Bolton, Cat. No. 362.* [I., p. 453).

**Solorina saccata**, (L.) Ach. (*Lichen immersus*, Huds. I., p. 453.  
*L. saccatus*, Withering, 67, Huds. II., p. 548.

1775. *J. Bolton, Cat. No. 363.* [*Lees' Fl.*  
 1888. On calcareous shales, the Eaves, Heptonstall—*T. S.*

PARMELIEI,

**Stictina sylvatica**, Ach. (*L. sylvaticus*, Linn., Huds. I., p. 453).

1775. *J. Bolton, Cat. No. 361.*

**Sticta pulmonaria**, Ach. (*L. pulmonarius*, Linn., Huds. I.,

1775. *J. Bolton, Cat. No. 349.* [p. 449).  
 1888. Hebden Valley—*T. Stansfield, Lees' Fl.*

**Ricasolia amplissima**, (Scop.) (*Lichen laciniatus*, Huds. I.,  
 p. 449. *L. glomuliferus*, Withering, 57).

1775. *J. Bolton, Cat. No. 361.*

**Ricasolia lætevirens**, (Lightf.) (*Lichen herbaceus*, Huds. II.)

- ‘In a wood about one mile from Halifax, scarce’—*Sir J. E. Smith, M.S. note in Hudson's Fl. Angl., 2nd Ed., now in the Linnean Society's Library.*

**Parmelia caperata**, Ach. (*L. caperatus*, Dill. Huds. I., p. 452).

1775. *J. Bolton, Cat. No. 357.*

The specimens in Herb. Leyl. are from Shedding Clough.

**Parmelia physodes**, Ach. (*L. physodes*, Linn., Huds. I., p. 447).

1775. *J. Bolton, Cat. No. 343.*

1836. Gibson Wood, Heptonstall—*Herb. Leyl.*

1888. Halifax—*W. West*; common about Todmorden—*T. Stansfield, Lees' Fl.*

1890. Crimsworth Dean; 1892, Hardcastle; 1903, on oak trees, Romfolly, Hebden Valley—*J. Needham!*



**Parmelia perlata**, (L.) Ach. (*L. perlatus*, Huds. I., p. 448).

1775. *J. Bolton, Cat. No. 346.*

High Greenwood, Heptonstall—*Herb. Leyl.*

**Parmelia fuliginosa**, (Dub.) (*Lichen olivaceus*, Huds. I., p. 446).

1775. *J. Bolton, Cat. No. 339.*

‘Dillenius xxiv., 77, includes three plants, *P. olivaceus*, *P. fuliginosus*, and *P. subaurifera*. Bolton, No. 339 doubtless included several things, but not *P. olivacea vera* and all the forms of *P. fuliginosa* would be most abundant’—(*J.A.M.*)

**Parmelia conspersa**, Ach. (*L. centrifugus*, Huds. I., p. 445).

1775. *J. Bolton, Cat. No. 336.*

Rocks in Harley Wood, and at Cross Stone, near the Church—*Herb. Leyl.*

1888. Near Cross Stone Church—*T. Stansfield, Lees' Fl.*

**Parmelia saxatilis**, (L.) Ach. (*Lichen saxatilis*, Huds. I., p. 446).

1775. *J. Bolton, Cat. No. 337.* Frequent—*Herb. Leyl.*

1877. North Dean Wood—*Dr. Favsons, 'Nat.' III., 48.*

1888. Crimsworth Dean. 1892, Pecket Wood and many other places. Very common on the masses of grit rock which lie about in the woods to the west of Halifax—*J. N.!*

Var. **omphalodes**, (L.) (*L. omphalodes*, Huds. I., p. 446.)

1775. *J. Bolton, Cat. No. 338.* [*Herb. Leyl.*

1838. Knotts Wood, near Todmorden—*J. Nowell.*

1888. Todmorden—*T. Stansfield, Lees' Fl.*

**Parmelia lævigata**, (Sm.) Ach.

Knotts Wood, near Todmorden—*J. Nowell, Herb. Leyl.*

**Physcia flavicans**, (Swartz.) (*L. vulpinus*, Huds. I., p. 462).

1775. *J. Bolton, Cat. No. 396.*

‘Dill. xiii., 16, quoted by Hudson, and specimens in Herb. With. are both *P. flavicans*, save that the latter contains a non-British specimen of true *Chlorea vulpina*. *Lichen vulpinus*, Linn., is not a British plant: the Swedish botanist mistook the figure of Dillenius for it, and so Hudson was led astray. *Physcia flavicans* is a South English species, but, as Mudd vouches for the correct determination of a plant gathered at Settle by Dr. Windsor, there is a possibility that Bolton may have found it in small quantity within the parish of Halifax’—(*J.A.M.*)

**Physcia parietina**, (L.) Ach. (*Lichen parietinus*, Huds. I., p. 447.)

1775. *J. Bolton, Cat. No. 342.*

1888, Todmorden—*T. Stansfield, Lees' Fl.*

1892. On wall, Elland Park Wood; Hardcastle; Crimsworth Dean; Rishworth, etc.—*J. Ndm.!* Not uncommon.

**Physcia ciliaris**, (L.) Schær. (*L. ciliaris*, Linn., Huds. I.,

1775. *J. Bolton, Cat. No. 345.* [p. 448.]

Near Todmorden—*Herb. Leyl.*

1888, Todmorden—*T. Stansfield, Lees' Fl.*

**Physcia stellaris**, (L.) Nyl. (*L. stellaris*, Linn., Huds. I.,

1775. *J. Bolton, Cat. No. 344.* [p. 448].

Var. **tenella**, (Scop.) Harley Wood—*T. S., Lees' Fl.*

#### GYROPHOREI.

**Umbilicaria pustulata**, Hoffm. (*L. pustulatus*, Linn., Huds.

1775. *J. Bolton, Cat. No. 367.* [I., p. 454.]

1778. Prope Halifax—*Dominus Bolton, Huds. II., p. 550.*

**Umbilicaria polyphylla**, Fr. (*Lichen polyphyllus*, L., Huds.

1775. *J. Bolton, Cat. No. 369.* [I., p. 455.]

1861. Near Todmorden—*Dr. Carrington, Mudd's Man.*

1888. Stansfield Moor—*J. Nowell.* (Same gathering as the above no doubt). Whirlaw, near Todmorden—*T. Stansfield, Lees' Fl.*

**Umbilicaria torrefacta**, Lightfoot (*U. evosa*, Leighton III.,

p. 145. *Lichen polyrhizus*, Bolt., No. 370; Huds. I.,

p. 455. *Lichen torrefactus*, Withering, 62.)

“Dill. xxx., 118, and Withering agree. This is not *Gyrophora evosa* (Weber) as Leighton supposed”—(*I.A.M.*)

1775. *J. Bolton, Cat. No. 370.*

Hare-law Stones, near Todmorden—*Herb. Leyl.*

1861. Stansfield Moor—*W. Brunton, Mudd's Man.*

**Umbilicaria polyrrhiza**, (L.) (*Lichen velleus*, Huds. I., p. 454.

*Lichen polyrhizus*, Withering, 64).

1775. *J. Bolton, Cat. No. 366.*

Stansfield Moor—*Herb. Leyl.*, as *Gyrophora pellita*, Ach.

1888. Todmorden—*T. Stansfield, Lees' Fl.*

**Umbilicaria proboscidea**, Hoffm. (*Lichen deustus*, Huds. I., 1775. *J. Bolton, Cat. No. 366.* [p. 455].)

LECANOREI.

**Pannaria pezizoides**, (Web.)

1861. Stansfield Moor—*John Nowell, Mudd's Man.*

**Squamaria saxicola**, (Poll.) (*L. pallescens*, Huds. I., p. 444. *L. muralis*, With., 29.)

1775. *J. Bolton, Cat. No. 330.*

“Dill. xviii., 17, which Hudson quotes is not this; A. is *Lecidea canescens*, and B. is *Lecanora galactina*. Hudson no doubt included *L. canescens* in his species, barren plants most likely, but his words ‘*scutellis pallidis*,’ show that it could not have been his type, while the other descriptive synonyms he quotes agree well enough with *S. saxicola*”  
—(*J.A.M.*)

**Placodium murorum**, (Hoffm.) (*L. flavescens*, Huds. I., p. 445).

1775. *J. Bolton, Cat. No. 335.*

**Lecanora vitellina**, (Ach.)

1888. Todmorden—*T. Stansfield, Lees' Fl.*

**Lecanora candelaria**, (Ach.) (*Lichen candelarius*, Huds. I., p. 444).

1775. *J. Bolton, Cat. No. 328.*

“Hudson's and Bolton's species no doubt covered several things besides true *L. candelaria*, which probably was the smallest part of what they called by that name”—(*T.A.M.*)

**Lecanora tartarea**, (L.) (*Lichen tartareus*, L., Huds. I., p. 444.)

1775. *J. Bolton, Cat. No.*

High Greenwood and rocks in Harley Wood—*Herb. Leyl.*

1888. Todmorden, common—*T. Stansfield, Lees' Fl.*

**Lecanora varia**, (Ehrh.)

1893. High Greenwood, on dead herbaceous stems; 1897, on oak, Crimsworth Dean; 1900, on elder bark, Rawholme; on oak, birch, dead bilberry stem, etc., Pecket Wood; and Rom folly, Hebden Bridge—*J. Needham.*

**Lecanora atra**, Ach. (*Lichen ater*, Huds. I., p. 445).

1775. *J. Bolton, Cat. No. 334.*

Frequent—*Herb. Leyl.* 1888, Todmorden—*A. S., Lees' Fl.*

**Lecanora subfusca**, (L.) (*Lichen subfuscus*, Huds. I., p. 444.)

1775. *J. Bolton, Cat. No. 331.*

1892. On stone, Brookhouse, Ovenden!

Forma **rugosa**, (Pers).

1892. On dead twig, Hardcastle.—*J. Needham!*

**Lecanora galactina**, (Ach.) (*Lichen albescens*, Huds. I., p. 445).

1775. *J. Bolton, Cat. No. 332.*

**Lecanora parella**, (L.) Ach.

Rocks in Harley Wood, frequent.—*Herb. Leyl.*

1888. Harley Wood.—*T. Stansfield, Lees' Fl.*

**Lecanora aurantiaca**, (Lightf.) (*Lichen flavo-rubescens*, Huds. I., p. 443. Withering, 15).

1775. *J. Bolton, Cat. No. 336.*

“ In the appendix (p. 659) to the reprint to the 2nd Ed. of the *Flora Anglica*, *Lichen flavo-rubescens* is acknowledged to be the same as Lightfoot's *Lichen aurantiacus*. That work preceded Hudson's 2nd Ed., but not his first; so why he relinquished the name is not quite clear, but from several instances it is evident that Hudson was no stickler for mere names ”—(*J.A.M.*)

**Lecanora ferruginea**, (Huds.) (*Lichen ferrugineus*, Huds. I.,

1775. *J. Bolton, Cat. No. 327.* p. 444).

**Lecanora hæmatomma**, (Ehrh.) Ach.

1888. Shaded stones, Todmorden.—*T. Stansfield, Lees' Fl.*

**Lecanora ventosa**, (L.) Ach.

Rocks near Todmorden.—*Herb. Leyl.*

1888. High grit rocks, Todmorden.—*T. S., Lees' Fl.*

**Pertusaria dealbata**, (Ach.)

1888. Todmorden, not infrequent.—*T. S., Lees' Fl.*

**Pertusaria communis**, DC. (*L. verrucosus*, Huds. I., p. 445, non. II., No. 70, which is *Stictina scrobiculata*).

1775. *J. Bolton, Cat. No. 333.*

**Pertusaria faginea**, (L.) (*Lichen fagineus*, Huds. I., p. 443).

1775. *J. Bolton, Cat. No. 322.*

1888. Near Todmorden, mostly on oaks.—*T. S., Lees' Fl.*

The specimens in Herb. Withr. under this name consist of *P. faginea* and *P. globulifera*.—(*J.A.M.*)

**Pertusaria globulifera**, (Turn.) (*Lichen carpinus*, Huds. I.,  
1775. *J. Bolton, Cat. No. 323.* [p. 443.]

**Urceolaria scruposa**, (L.) Ach.

On rocks, Harley Wood, etc.—*Herb. Leyl.*

1888. Todmorden.—*J. Stansfield, Lees' Fl.*

#### LECIDEINEI.

**Lecidea decolorans**, Flk.

1877. North Dean.—*H. F. Parsons, Nat., Vol. III., p. 48.*

1892. Mount Tabor, near Halifax !

**Lecidea vernalis**, (L.) Ach.

1898. Midgehole, Hebden Bridge.—*H. T. Soppitt.*

**Lecidea sanguinaria**, (L.) Ach. (*L. sanguinarius*, Huds. I.,  
1775. *J. Bolton, Cat. No. 319.* [p. 442.]

“Hudson makes no mention of the sanguineous stratum, and therefore *L. parasema*, *L. disciformis* and *L. latypha* were all called by the earlier botanists *Lichen sanguinarius*, and they supposed that those plants which had the blood-red stratum within were diseased”—(*J.A.M.*)

1888. Tolerably common near Todmorden.—*T. S., Lees' Fl.*

**Lecidea fusco-atra**, (L.) Ach. (*Lichen fusco-ater*, Huds. I., p. 320)

1775. *J. Bolton, Cat. No. 320.*

Mr. Martindale considers there is no reason to doubt that Bolton had true *fusco-atra* among the several dark thallused lichens with black apothecia which were included under that name in his time,

**Lecidea contigua**, Fr.

1888. Hebden Bridge; Luddenden Dean.—*W. West, Lees' Fl.*

1892. On rock-face, Hardcastle. 1903. On old wall, Midgehole Road, Hebden Bridge, infested with the parasitic lichen *Verrucaria gemmifera*.—*J. Needham !*

Forma **steriza**, Ach.

On rock-face, stream side, Strynes, Stansfield.—*J. Needham !*

**Lecidea confluens**, (Web.) Ach.

1888. Near Todmorden, not infrequent.—*T. S., Lees' Fl.*

**Lecidea canescens**, (Dicks.) Ach.

1888. Todmorden.—*T. Stansfield, Lees' Fl.*

**Lecidea Oederi**, (Web.) Ach.

Stansfield Moor—*Herb. Leyl.*

**Lecidea sabuletorum**, Flk.

1903. On decaying moss, Midgehole Road, Hebden Bridge,  
—*J. Needham*. First Calder-area record.

**Lecidea geographica**, (L.) (*Lichen geographicus*, Huds. I., p. 442).

1775. *J. Bolton, Cat. No. 318.*

1881. On exposed rocks near Todmorden, common—  
*T. S., Lees' Fl.*

## GRAPHIDEI.

**Opegrapha atra**, Pers (*Lichen rugosus*, Huds. I., p. 442).

1775. *J. Bolton, Cat. No. 318.*

“Dill. xviii., 2, and *Herb. With.* both contain only specimens  
of a fungus *Dichæna rugosa*. In so far as it was a lichen,  
*Lichen rugosus* = *Opegrapha atra*.”—(J.A.M.)

**Graphis scripta**, Ach. (*Lichen scriptus*, Huds. I., p. 442).

1775. *J. Bolton, Cat. No. 316.*

High Greenwood, on birch bark—*Herb. Leyl.*

“Withering *Herb. G. scripta* and *G. dendritica*. *Lichen scriptus*  
included every lichen which could answer to the descrip-  
tion. ‘*Crusta tenuissima peregrinis velut litteris inscripta.*’”—  
(J.A.M.)

## PYRENOCARPEI.

**Endocarpon miniatum**, (L.) Ach. (*Lichen miniatus*, Huds. I.,

1775. *J. Bolton, Cat. No. 365.* [p. 454.]

**Verrucaria gemmifera**, Tayl.

1903. On old wall, Midgehole Road, Hebden Bridge.—*J.*  
*Needham*. Parasitic on thallus of *Lecidea contigua*. First  
W. R. record.

## Additions and Corrections.

**Collema pulposum**, (p. 216).

Var. **tenax**, Ach. (*Lichen cristatus*, L., Hudson, ed. I.,  
1775. *J. Bolton, Cat. No. 340.* [p. 447.]

**Collema cheileum**, (*Lichen crispus*, Huds. I., p. 447. With. 76).

1775. *J. Bolton, Cat. No. 341.* [instead of *C. crispum*,  
p. 216.] [J.A.M.]

Dillenius xix., 23, and Withering's *crispus* are *cheileum*.—

**Collema melænum**, Ach.

Forma **marginale** (*Lichen decumbens*, Huds. I., p. 449.)  
1775. *J. Bolton, Cat. No. 350.*

**Sphærophoron coralloides** (*Lichen globosus*, Huds. I., p. 460.)

1775. *J. Bolton, Cat. No. 389.*

**Lecanora conizæa**, Ach. (*L. lutescens*, Leight., ed. III, p. 184).

J.A.M. considers the lichen so common on the trees in Pecket and other woods, recorded as *L. varia* on p. 224, to be *L. conizæoides*, Nyl., and the one on bilberry stems to be *L. conizæa*, Ach. He remarks, "so far as I can see *L. conizæoides* hardly deserves separating from *L. conizæa*, but the thallus is more granular and the margin of the apothecia rather different. It is, as it were, intermediate between *L. varia* and *L. conizæa*."

Crombie (*Lich. Brit.* 1870) places *L. conizæa* among the varieties of *L. varia*.

In addition to Mr. Hebden's aid in compiling the above list of lichens, Mr. J. A. Martindale, of Staveley, near Kendal, was consulted respecting the elucidation of a few of the more obscure connections between the names as given in Hudson's *Flora Anglica*, Ed. I. (1762), Ed. II. (1778), Bolton's list (1775), and the modern synonyms employed in Leighton's *Lichen Flora*. Unfortunately, this was after pp. 215-216 were in print. Mr. Martindale, at once, kindly undertook an independent revision of the whole of Bolton's list of 83 species. This has enabled us to incorporate 81, along with a few most valuable remarks anent certain of them; and we here give him our most hearty thanks.

It is rather remarkable that, of the 85 species contained in the first edition of Hudson, Bolton should have met with no fewer than 83 in the parish of Halifax. Doubtless he sent Hudson specimens of most, if not all, of the lichens he collected, and he is thanked, along with five or six other botanists, by Dr. Hudson, in the preface to both Eds. I and II of his *Flora*, for great assistance rendered in their production.—C. C.



# ALGÆ.

THE bulk of the following list of local Algæ is compiled from the 'Alga-Flora of Yorkshire': Transactions of the Yorkshire Naturalists' Union, Parts 22, 23, 25, 27, 1900-01, by W. West, F.L.S., and G. S. West, B.A., A.R.C.S.

Messrs. W. West and sons have visited the parish on many occasions to collect algæ, etc., mostly in Crimsworth Dean, Cragg Vale towards Blackstone Edge, Ogden Clough, Greetland, and Fixby.

Very little has been done in this branch by resident botanists. The late Thos. Carnell occasionally made collections. Some years ago the writer made a number of sketches of Desmids, Diatoms, etc., collected in the spring-water pond near Park Gate Farm, Southowram, and other places; these have been verified by Messrs. W. West and R. H. Philip.

When the number of springs in all parts of the parish is taken into account, along with the numerous moorland bogs and swamps, the Alga-Flora would prove a very rich one if thoroughly worked out.

The sign ! denotes that the species has been met with by the writer. In all other cases, where not specially noted, the records are by the Messrs. West.

When abbreviations occur they are as follows:—

T. C.	Thomas Carnell.
J. W. S.	J. Williams Sutcliffe.
Cr. Dn.	Crimsworth Dean.
Cr. Va.	Cragg Vale.
Bn. Cl.	Binnroyd Clough, Norland.
Og. Cl.	Ogden Clough.
E. P. W.	Elland Park Wood.
Pk. Gt.	Park Gate Pond, Southowram.
Hdc.	Hardcastle Crags, Hebden Valley.

C.C.

## FLORIDEÆ.

### BATRACHOSPERMEÆ.

**Chatransia chalybea**, (Lyngb.) Fr. Near Halifax.

**C. violacea**, Kütz. On wet rock with *Lemanea fluviatilis*!

**C. Hermannii** (Roth.) Kütz. North Dean.

### HILDENBRANDTIACEÆ.

**Hildenbrandtia rivularis**, (Liebm.), J. Ag. On stones in streams, Bn. Cl., Og. Cl., High Greenwood, Hardcastle!

## LEMNEACEÆ.

**Lemanea fluviatilis**, Ag. Hebble, Wheatley—*J. H. Bolton*;  
Binnroyd Clough Bottom!

## CHLOROPHYCEÆ.

## COLEOCHÆTACEÆ.

**Coleochæte scutata**, Bréb. 1890. Park Gate!

## ÆDOGONIACEÆ.

**Bulbochæte**, sp.? 1890. Park Gate!

**Ædogonium**, sp.? 1890. In well, Wellhead!

## ULVACEÆ.

**Prasiola crispa**, (Lightf.), Ag. Copley, *Naturalist*, Oct. 1877;  
Common at roadside fieldgates!

## ULOTRICHACEÆ.

**Hormidium murale**, (Lyngb.), Kütz. Coley.

**H. parietinum**, (Vauch.), Kütz. Halifax.

**Hormiscia subtilis**, (Kütz.), De Toni. Southowram! Og. Cl.

Var. **variabilis**, (Kütz.) Cr. Dn., Og. Cl., Cr. Va., Ld. Dn.

Var. **tenerrima**, (Kütz.), Kirchn. Swill Hill; Og. Cl.

**H. tenuis**, (Kütz.), De Toni. Swill Hill.

**H. zonata**, (W. et M.) Aresch.

Var. **bicolor**, (Eng. Bot.) Nob. Cr. Dn.

**Nordstedtia globosa**, (Nordst.) Borzi. Pk. Gt.!

**Draparnaldia glomerata**, (Vauch.) Ag. 1890. In rill, Salton-  
stall Moor, near Castle Carr—*H. Waterworth*.

**D. plumosa**, (Vauch.) Ag. In rill, Salterhebble—*W. Dyche*.

**Stigeoclonium protensum**, (Dillw.) Kütz. 1893. Bradshaw!

**S. nanum**, (Dillw.) Kütz. Coley, Og. Cl.

**S. fastigiatum**, Kütz. On stones in stream near Halifax.

**S. tenue**, (Ag.) Rabh. Stream, Cr. Va.—*J.W.S.*

## CONFERVACEÆ.

**Conferva bombycina**, Ag. Norland Moor, *Nat.*, Oct. 1877.

**C. (?) tenerrima**, Kütz. 1892. In rill, Norland—*J.W.S.*!

**C. undulata**, West and G. S. West. Ogden Cl.

**Microspora vulgaris**, Rabh. 1892. In rill, Norland—*J.W.S.*!

## CHROOLEPIDACEÆ.

**Trentepohlia aurea**, (L.) Mart. (*Byssus aureus*, L.)

1775. *J. Bolton*, *Cat. No. 423*. Hebden Bridge—*J. Ndm.*!

**Microthamnion strictissimum**, Rabh. Greetland.

**M. Kützingianum**, Näg. Cragg Vale.

## CLADOPHORACEÆ.

**Cladophora crispata**, (Roth.) Kütz. Halifax.

## ZYGNEFACEÆ.

**Mougeotia scalaris**, Hass. Ogden Clough.

**Spirogyra communis**, (Hass.) Kütz. Fixby.

- S. longata**, (Vauch.) Kütz. Popple-well, Warley—*J.W.S.*  
**S. porticalis**, (Vauch.) Cleve. (*S. quinina* (Ag.) Kütz.)  
 1888. Well in Well-head Field! 1889. Binnroyd Clough!  
**S. condensata**, (Vauch.) Kütz. Popple-well, Warley—*J.W.S.*

## DESMIDIACEÆ.

- Gonatozygon Ralfsii**, De Bary. Hebden Bridge.  
**G. Kinahani**, (Arch.) Rabh. 1888. In well, Well-head Field!  
**Spirotænia condensata**, Bréb. Ogden Cl.; Bn. Cl.—*T.C.*  
**Mesotænium mirificum**, Arch. Ogden Clough.  
**M. macrococcum**, (Kütz.) Hebden Bridge; Bn. Cl.!  
**M. Endlicherianum**, Näg. Var. **grande**, Nordst. Cr. Va.  
**Cylindrocystis Brebissonii**, Menegh. (*Penium*, Ralfs.) Bn. Cl.!  
**C. crassa**, De Bary. Ogden Clough. [Og. Cl.  
**C. diplospora**, Lund. 1892. Norland—*J.W.S.*  
**Penium digitus**, (Ehrnb.) Bréb. Ogden Clough.  
**P. oblongum**, De Bary. Greetland; Ogden Clough.  
**P. truncatum**, Bréb. Forma **punctata**, West. Greetland.  
**P. margaritaceum**, (Ehrnb.) Bréb. Pk. Gt.—*T.C.*  
**P. polymorphum**, Perty. Ogden Clough, Cr. Dn.  
**P. cucurbitinum**, Biss. Ogden Clough.  
**P. cruciferum**, (De Bary) Wittr. Ogden Clough.  
**Roya obtusa**, (Bréb.) West and G. S. West. Greetland.  
 Var. **montana**, West and G. S. West. Ogden Clough..  
**Closterium parvulum**, Näg. Ogden Clough.  
**C. Venus**, Kütz. Park Gate—*T.C.*!  
**C. Leibleinii**, Kütz. Fixby.  
**C. moniliferum**, (Bory) Ehrenb. 1892. Pk. Gt.! Hebden Bdge.  
**C. Ehrenberghii**, Menegh. Pk. Gt.! Og. Cl.  
**C. lunula**, (Müller) Nitzsch. Cr. Dn.  
**C. Cornu**, Ehrnb. Greetland.  
**C. striolatum**, Ehrnb. Greetland. 1891. Pk. Gt.!  
**C. intermedium**, Ralfs. 1892. Pk. Gt.—*T.C.*!  
**C. lineatum**, Ehrnb. 1892. Pk. Gt.—*T.C.*!  
**C. Pritchardianum**, Arch. Cr. Dn.  
**C. acutum**, (Lyngb.) Ralfs. Pk. Gt.!  
**C. Ralfsii**, Bréb. Pk. Gt.!  
**C. rostratum**, Ehrnb. Greetland. 1892. Pk. Gt.—*T.C.*!  
**Pleurotænium Trabecula**, (Ehrnb.) Näg. Fixby. Pk. Gt.!  
**Tetmemorus Brébissonii**, (Menegh.) Ralfs. Halifax.  
**T. granulatus**, (Bréb.) Ralfs. 1889. Mount Tabor—*H. Waterworth*. 1891. Greetland! Ogden Clough; Cragg Vale.  
**T. lævis**, (Kütz.) Ralfs. Ogden Clough.  
**Euastrum lobulatum**, Bréb. Cragg Vale.

- Cosmarium cucumis**, Corda. Og. Cl., Cr. Dn.  
**C. subcucumis**, Schmidle. Ogden Clough.  
**C. cœlatum**, Ralfs. Ogden Clough ; Cragg Vale.  
**C. subcrenatum**, Hantzsch. Cragg Vale.  
**C. margaritifera**, (Turp.) Menegh. Park Gate Pond—  
*T.C.!* Ogden Clough—*A. Bullock*.  
**C. bioculatum**, Bréb. Halifax.  
**C. Hammeri**, Reinsch. Ogden Clough.  
**C. præmorsum**, Bréb. Cragg Vale ; Ogden Clough.  
**C. punctulatum**, Bréb. Halifax.  
**C. Blyttii**, Wille. Cragg Vale.  
**C. granatum**, Bréb. Var. **subgranatum**, Nordst. Cr. Dn.  
**C. Holmiense**, Lund. Ogden Clough.  
**C. notabile**, Bréb. Ogden Clough.  
**C. tetraophthalmum**, (Kütz.) Menegh. Ogden Clough.  
**C. Botrytis**, (Bory) Menegh. Park Gate—*T.C.*  
**C. ochthodes**, Nordst. Crimsworth Dean.  
**C. speciosum**, Lund. Crimsworth Dean ; Ogden Clough.  
**C. pseudarctoum**, Nordst. Ogden Clough.  
**C. latum**, Bréb. Forma **minor**, Boldt. Ogden Clough.  
**C. crenatum**, Ralfs. Crimsworth Dean, Ogden Clough.  
1889. Binnroyd Clough!  
**C. quadratum**, Ralfs. Og. Cl. 1896.—*A. Bullock*.  
**C. sublobatum**, (Bréb.) Arch. Ogden Clough.  
**C. anceps**, Lund. Ogden Clough.  
**C. Heimerlii**, West and G. S. West. (*C. minutissimum*, Heim.)  
Var. **tumidum**, W. and G. S. W., Greetland.  
**C. Meneghinii**, Bréb. Ogden Clough.  
**C. læve**, Rabh. Var. **septentrionale**, Wille. Og. Cl. ; Cr. Dn.  
**C. cucurbita**, Bréb. Cragg Vale.  
**Staurostrum orbiculare**, (Ehrnb.) Ralfs.  
Var. **extensum**, Nordst. Ogden Clough.  
**S. punctulatum**, Bréb. Cragg Vale ; Cr. Dn. ; Bn. Cl. !  
**S. pygmæum**, Bréb. Ogden Clough ; Swill Hill.  
**S. Kjellmanii**, Wille. Var. **rotundum**, W. & G. S. W. Og. Cl.  
**S. turgescens**, De Not. Crimsworth Dean.  
Var. **articum**, Wille. Ogden Clough.  
**S. muricatum**, Bréb. Ogden Clough.  
**S. hexacerum**, (Ehrnb.) (*S. tricornis*, Ralfs). Pk. Gt. !  
**S. aspersum**, Bréb. Park Gate Pond !  
**Anthrodesmus Incus**, (Bréb.) Hass. Greetland.  
**Hyalotheca dissiliens**, (Sm.) Bréb. Greetland !

## VAUCHERiaceÆ.

- Vaucheria sessilis**, (Vauch.), DC. Ogden Clough.  
**V. terrestris**, Lyngb. 1868. Grimescar—*T. P. Hobkirk*.  
 1892. Cromwell Bottom! Pickwood Scar, Norland!

## VOLVOCINEÆ.

- Volvox aureus**, Ehrnb. 1887. Park Gate Pond—*T.C.*!  
**Tetragonium lacustre**, West and G. S. West. Shelf.

## PALMELLACEÆ.

- Rhaphidium polymorphum**, Fresen.  
 Var. **falcatum**, (Corda) Rabh. 1888. Catty Well!  
**Characium heteromorphum**, (Reinsch). Greetland.  
**Tetraspora lubrica**, (Roth.) Ag. Greetland.  
**Botryococcus Braunii**, Kütz. Cragg Vale.  
**Stichococcus dissectus**, Gay. Swill Hill.  
**Pleurococcus vulgaris**, Menegh. Common on wood, etc.

## MYXOPHYCEÆ.

## NOSTOCEÆ.

- Nostoc commune**, Vauch. Salterhebble!  
**Nostoc microscopicum**, Carm. Halifax.  
**Anabæna laxa**, (Rabh.) A. Braun. Cragg Vale.  
**Cylindrospermum majus**, Kütz (*C. macrospermum*, Rabh.)  
 1888, In blue-black gelatinous masses on shale, Bn. Cl.!

## LYNGBYEÆ.

- Phormidium tenue**, (Menegh.) Cragg Vale.  
**P. Corium**, (Ag.) Cragg Vale. [J.W.S.  
**P. autumnale**, (Ag.) (*Oscillatoria antilaria*, Mart.) Norland—  
**Oscillatoria irrigua**, Kütz. Near Halifax. Colden Clough.!  
**O. tenuis**, Ag. Halifax.  
**O. amphibia**, Ag. (*O. tenerrima*, Kütz.) Bn. Cl.—*J.W.S.*!

## CHROOCOCCACEÆ.

- Aphanothece microscopica**, Näg. Ogden Clough.  
**Synechococcus major**, Schröter. Ogden Clough.  
**Merismopedia glauca**, (Ehrnb.) Näg. Greetland.  
**Gomphosphæria aponina**, Kütz. Callis Wood!  
**Glæocapsa caldariorum** (Suring.) Rabh.  
 1902. On flower-pots, etc., greenhouse, Wellhead.  
**Porphyridium cruentum**, (Ag.) Näg. Shelf. E.P.W.!  
**Chroococcus minor**, (Kütz.) Näg. Ogden Clough.  
**C. helveticus**, Näg. Ogden Clough.

## BACILLARIEÆ.

## CYMBELLEÆ.

- Cymbella cuspidata**, Kütz. Greetland, Swill Hill, Ogden  
 Clough, Cragg Vale.

- C. affinis**, Kütz. Ogden Clough, Crimsworth Dean.  
**C. lanceolata**, (Ehrnb.) Kirchn. Binnroyd Clough, High Greenwood, Ogden Clough, Colden Clough!  
**C. cymbiformis**, (Kütz.) Bréb. Ogden Clough. Hardcastle!  
**Encyonema turgidum**, (Greg.) Grun. Tag Lock, Catty-well!  
**E. ventricosum**, (Ag.) Kütz. Coley.  
**E. gracile**, Rabh. Cragg Vale.

## NAVICULEÆ.

- Stauroneis anceps**, Ehrnb. Halifax.  
**Navicula major**, Kütz. (*Pinnularia major*, Rabh.) Swill Hill, Ogden Clough. Barkisland! Norland! Gibb Slack Moor, Wadsworth!  
**N. viridis**, Kütz. Cragg Vale. Park Gate!  
**N. Hilseana**, Janisch. Cragg Vale.  
**N. Brebissonii**, Kütz. Cragg Vale.  
**N. appendiculata**, (Ag.) Kütz. Cragg Vale.  
**N. mesolepta**, Ehrnb. Cragg Vale.  
**N. peregrina**, (Ehrnb.) Kütz. Coley.  
**N. radiosa**, Kütz. Greetland.  
**N. angustata**, W. Sm. Greetland, Ogden Clough, Cr. Dn.  
**N. rhynchocephala**, Kütz. Greetland.  
**N. Semen**, Ehrnb. Sundew swamp, Norland Moor!  
**N. dicephala**, Ehrnb. Colden Cl.! Halifax, Og. Cl., Cr. Va.  
**N. elliptica**, Kütz. Ogden Clough! Among filamentous algæ on stone in stream, Luddenden Dean; among *Cylindrospermum macrospermum*, Bn. Cl.! On moss, Barkisland; Colden Clough! Hardcastle—*H. Waterworth*.  
**N. exilis**, (Kütz.) Grun. Coley, Hebden Bridge. Colden Cl.!  
**N. pupula**, Kütz. Ogden Clough.  
**Vanheurckia rhomboides**, (Ehrnb.) Bréb. Greetland. Among moss, Catty Well; Sundew swamp, Norland Moor; in swamp, Erringden Moor; Barkisland!  
 Var. **saxonica**, (Rabh.) Ogden Clough, Cragg Vale.  
**Pleurosigma Spencerii**, (Quekett) W. Sm. Fixby.

## GOMPHONEMEÆ.

- Gomphonema acuminatum**, Ehrnb. Wellside, Ogden!  
**G. tenellum**, Kütz. Ogden Clough.  
**G. intricatum**, Kütz. Ogden Clough. In well, Wellhead!  
 Var. **Vibrio**, (Ehrnb.) Ogden Clough, Crimsworth Dean.  
**G. parvulum**, Kütz. On moss, Catty Well!  
**Rhoicosphenia curvata**, (Kütz.) Grun. Attached by short, simple stalk to filament of *Edogonium*, Tag Lock!



## ACHNANTHEÆ.

- Achnanthidium flexellum**, (Kütz.) Bréb. Og. Cl., Heb. Bdge.  
**Achnanthes microcephala**, (Kütz.) Grun. Ogden Clough.  
**A. exilis**, Kütz. Coley.  
**A. lanceolata**, (Bréb.) Grun. Cragg Vale.  
**Cocconeis Pediculus**, Ehrnb. High Greenwood!  
**C. Placentula**, Ehrnb. Og. Cl. Tag Lock, Norland Moor!

## EPITHEMIEÆ.

- Epithemia turgida**, (Ehrnb.) Kütz. Bn. Cl., High Green-  
 Var. **Westermanni**, Kütz. Ogden Clough. [wood!  
**E. gibba**, Kütz. Og. Cl., Cr. Dn. High Greenwood!  
**E. Argus**, (Ehrnb.) Kütz. Among moss, Hebden Valley,  
 Norland Moor, High Greenwood!  
 Var. **alpestris**, (W. Sm.) Rabh. Og. Cl., Hebden Bdge.  
**E. gibberula**, (Ehrnb.) Kütz. Cragg Vale.  
 Var. **rupestris**, (W. Sm.) Rabh. Crimsworth Dean.  
**Eunotia Arcus**, Ehrnb. Bn. Cl., Erringden Moor! Og. Cl.  
 Var. **minor**, V. H. Among mosses on wet wall, Lee  
 Bank; on filamentous algæ, Tag Lock; well side,  
 Grain, Crimsworth Dean! [Well, etc.!  
**E. major**, (W. Sm.) Rabh. 1888. Well, Wellhead, Catty  
**E. gracilis**, (Ehrnb.) Rabh. Greetland, Ogden Clough.  
 Colden Clough. High Greenwood, Wellhead!  
**E. exigua**, (Bréb.) Rabh. Ogden Clough.  
 In thousands on *Hypnum fluitans*, Elland Park Wood!  
 Gibb Slack Moor!  
**E. pectinalis**, (Dillw.) Rabh. Catty Well! Og. Cl., Cr. Va.  
 Var. **undulata**, (W. Sm.) Rabh. (*Himantidium undulatum*,  
 (W. Sm.) Norland—*J. Wms. S.*  
**E. Faba**, (Ehrnb.) Grun. (*Himantidium Soleirolei*, Kütz.)  
 Ogden Clough. In field well, Wellhead, Halifax!  
**E. Veneris**, Kütz. Ogden Clough.  
**E. lunaris**, (Ehrnb.) Grun. Ogden Clough. Wellside, Grain  
 farm, Crimsworth Dn.! Erringden Moor—*J. T. Aspin.*

## SYNEDREÆ.

- Synedra Vaucheriæ**, Kütz. Halifax, Cragg Vale.  
**S. Olna**, (Nitzsch) Ehrnb. Fixby, Ogden Clough.  
 Var **longissima**, (W. Sm.) Grun. Gate Head Clough!  
**S. Acus**, (Kütz.) Grun. Greetland, Fixby.  
 Var. **delicatissima**, (W. Sm.) Grun. Fixby.  
**S. radians**, (Kütz.) Grun. Ogden Clough.  
**Asterionella formosa**, Hass. Greetland.



## FRAGILARIEÆ.

- Fragilaria capucina**, Desmaz. Tag Lock, Barkisland, Colden  
**F. mutabilis**, (W. Sm.) Grun. Fixby. [Cl.!

## MERIDIONIDÆ.

- Meridion circulare**, (Grev.) Ag. Coley. Salterhebble!

## DIATOMEÆ.

- Diatoma vulgare**, Bory. In swamp, Norland!  
**D. elongatum**, Ag. Fixby.  
**D. hiemale**, (Lyngb.) Heib. (*Odontidium hiemale*, Kütz).  
 Greetland, Crimsworth Dn., Colden Cl., Catty Well!  
 Var. **mesodon**, (Kütz) V. H.  
 Og. Cl., Cr. Dn., Heb. Bdge. On moss, Well Head,  
 Catty Well, Erringden Moor, Lud. Dn., Tag Lock!

- Denticula tenuis**, Kütz. Crimsworth Dean.

- D. elegans**, Kütz. Ogden Clough.

## TABELLARIEÆ.

- Tabellaria fenestrata**, (Lyngb.) Kütz. Greetland.  
**T. flocculosa**, (Roth.) Kütz. Cr. Va. Well Head, Hx.; Og. Cl.!

## SURIRELLEÆ.

- Cymatopleura elliptica**, (Bréb.) W. Sm. Fixby.  
**Surirella biseriata**, Bréb. In well, Shay Lane, Ovenden; on  
 moss, Barkisland! Binn Royd Clough—*T.C.*  
**S. linearis**, W. Sm. Greetland, Ogden Clough, Cragg Vale.  
**S. robusta**, Ehrub. Var. **splendida** (Ehrnb.) V. H.  
 In well, Shay Lane; among moss, Binn Royd Clough!  
**S. ovalis**, Bréb. 1891. Kirk's Dam, Old Lane, Hx.!  
 Var. **minuta**, Bréb. V. H. Fixby; Coley.  
 Var. **pinnata**, (W. Sm.) V. H. Ogden Clough.  
**S. spiralis**, Kütz. Hebden Bridge.

## NITZSCHIEÆ.

- Hantzschia amphioxys**, (Ehrb.) Grun. 1891. Ogden Cl.!  
**Nitzschia parvula**, W. Sm. Ogden Clough.  
**N. sinuata**, (W. Sm.) Grun. Ogden Clough.  
**N. Sigmoidea**, (Ehrnb.) W. Sm. Halifax. Canal, Salter-  
 hebble!  
**N. linearis**, (Ag.) Var. **tenuis**, (W. Sm.) Grun. Cragg Vale.  
**N. Palea**, (Kütz.) W. Sm. Crimsworth Dean; Cragg Vale.

## MELOSIREÆ.

- Melosira varians**, Ag. Fixby.

# THE FUNGUS-FLORA.

CHARLES CROSSLAND, F.L.S.

## INTRODUCTION.

THE basis of this branch of the Flora, as of all the others, lies in Bolton's Catalogue, which enumerates 55 species, Nos. 434-489. In the case of the Ferns and Fungi, the Catalogue was supplemented by illustrated works; the one on Fungi being limited in scope to this locality. This (*vide* the General Introduction, p. lii.) includes 231 species, most of which were either new species, or new British records. Hymenomycetes in the shape of Agarics, Polypores, Clavarias, etc., make up 138, the rest were miscellaneous. In addition, there are a number of coloured drawings of fungi (*vide l.c.* p. liv.) in the British Museum. These the writer has had the pleasure of examining. Taken as a whole, Bolton's drawings are representative of many and various orders, and are extensively quoted in the systematic mycological works of Berkeley, Fries, Cooke, Stevenson, Rabenhorst, Masee, and others. Close upon 220 of the 230 or 240 species figured, may safely be included in the present list. We are unable to identify definitely a few of the smaller ones; nor can this be wondered at when, even at the present day, it requires in some instances, a magnification of 300 to 400 diameters to distinguish, by aid of the spores, one species from another.

After Bolton's death no local botanist appears to have studied this branch, until the present writer commenced in 1888, under the wing of the Yorkshire Naturalists' Union. Dr. F. H. Parsons, of Goole, and Mr. W. West recorded a few in "The Naturalist," collected during Y.N.U. excursions into this district. The Huddersfield Naturalists' Society record in their Circular (1883) several found at Grimscar, Fixby, Rastrick, etc. All these, and many of Bolton's, are incorporated in Lees' Flora of West Yorkshire.

Between 1889 and the present year (1903), Mr. Needham has collected an immense amount of material about Hebden Bridge. In 1894 Mr. H. T. Soppitt commenced to take an active part in local investigations, and continued until within a few weeks of his death, in 1899. He brought to light several most interesting micro-species (Hx. Nat., Vol. IV., pp. 31-36). The Hebden Bridge district has yielded the greatest weight of material; Luddenden Dean, North Dean Wood, and Elland Park Wood coming next. Shibden and Wheatley, where Bolton found many of the specimens he figured, have been rather neglected in favour of what were considered more prolific places. At present they are lacking in moist, shaded woodlands; and small, open, dry plantations are not of much use from a mycological standpoint, though such places do occasionally produce rare things. Special efforts have been made to find micro-species, and with marked success.

The total number of fungi met with in the parish up to the present is 1105. Since 1889, thirteen species new to science have been discovered, and twenty-three new to Britain. In the meantime, 350 have been figured in natural colours. These drawings are accompanied by copious notes, in some cases amounting to a re-description of the species, with many hitherto neglected microscopic characters added. Mr. Masee, of the Royal Herbarium, Kew, has been afforded opportunities of revising and completing the diagnosis of numerous insufficiently described species from material sent him from this district. A few of Bolton's species, not met with anywhere between his time and the present, have been re-discovered, notably *Coprinus oblectus*, Tab. 142 ('Nat.,' Dec. 1902). *Pholiota dura* (Bolton) Tab. 67, f. I., has also been confirmed. Others of his have not since been found, but it is yet possible they may be. The parish is not by any means exhausted, either for the confirmation of old records, or the finding of new species; even while this was being written, Mr. U. Bairstow has brought me a most handsome toadstool, *Lentinus squamosus*, new to Britain, found growing on some wood-work in his garden in Halifax.

For various reasons students of fungi are comparatively few, but, during the last two or three decades, there has been an awakening to the fact that from a biological point of view, "the study of fungi cannot be ignored by anyone desirous of

becoming acquainted with the various processes of life." In comparison with other plants, their systematic study is difficult. Some of them cannot be preserved at all—they putresce; and those that do dry, so shrivel up in the process, that little of their original character remains. Careful drawing is the best means of dealing with them for systematic purposes. Another difficulty is, that we are never sure of seeing a second time those that we may want. Some certainly reappear, year after year, in the same place, or under similar conditions in fresh places, and one can always rely upon finding them at the proper time, if needed. Others are very inconstant in their appearance; they may be found once and not again, perhaps for years, if at all. Scores we never have seen but once, although many of them have been carefully and repeatedly sought for in the same and similar places. This applies to macro- and micro-species alike. Two instances may be given. *Pocillum Needhami* was found by Mr. J. T. Aspin and myself on fallen oak-leaves in Elland Park Wood, in 1894, and proved to be a new species. All the specimens, after drawings and descriptions had been taken, were sent to Kew. More were sought for. The place has been visited times out of number, year after year, and thousands of dead oak-leaves carefully examined, all to no purpose; no trace of it has since been found either there or anywhere else. Two specimens only of another very distinct new species, *Lactarius glaucescens*, were found in Wade Wood, Luddenden Dean, in 1899, and one in North Dean Wood the year following, but all search for more has been in vain. Half these specimens are at Kew, and half at the British Museum (Natural History).

There is another peculiarity to note in connection with fungi. Species occasionally appear in vast abundance in a place for one, two, or three years in succession, then totally disappear, and are seen no more for years, if ever, at that place. *Desmazierella acicola*, a most beautiful saucer-shaped fungus, which grows only on dead pine-needles, was found by Mr. Needham in hundreds in Crimsworth Dean in 1897. They vanished the same year and have not since reappeared. Fungi seem to have periods of virulence in one locality and then die out, or move on to fresh fields of action.

Numerous unknown species, of which only two or three specimens were discovered, are laid on one side, along with such drawings and descriptions as could be taken at the time,

awaiting the finding of more ample material to submit to acknowledged authorities in special branches.

No species of doubtful determination has been included in the list so far as we know. A host of unreliable names has not been our object. All the recent species here recorded have passed through the writer's hands. His thanks are due and are cordially paid to Dr. M. C. Cooke, A.L.S., Mr. G. Masee, F.L.S., V.M. H., Royal Herbarium, Kew, Mr. Worthington G. Smith, British Museum (Nat. Hist.), Prof. Dr. H. Rehm, Munich, Dr. E. Boudier, Montmorency, and others for valuable assistance rendered by examining material submitted to them. In a very special sense are they due to Mr. Masee.

The classification adopted is that of Prof. Saccardo's "Sylloge Fungorum," with a few slight exceptions. Bolton's names in many cases vary from those at present in use, but it has been thought quite sufficient to give the plate (Tab.) number, and thus avoid cumbering the pages with synonyms.

#### ADDITIONAL ABBREVIATIONS EMPLOYED.

J.T.A.	J. T. Aspin.
U.B.	U. Bairstow.
J.N.	J. Needham.
H.T.S.	H. T. Soppitt.
Hx. Nat.	Halifax Naturalist.
Nat.	Naturalist.
Bolton.	J. Bolton's History of Funguses.
Bot. Sec.	Botanical Section, Halifax Scientific Society.
Ca. Wd.	Callis Wood, Erringden.
Cwl. Wd.	Cromwell Wood, Southowram.
El. Pk. Wd.	Elland Park Wood, Southowram.
Hx.	Halifax.
Hept.	Heptonstall.
H. Gr.	High Greenwood, Heptonstall.
Lud. Dn.	Luddenden Dean.
Mdgh.	Midge-hole, Hebden Bridge.
N. D. Wd.	North Dean Wood.
Pck. Wd.	Pecket Wood, near Hebden Bridge.
Stainl.	Stainland.
Sun Wd.	Sun Wood, near Coley.
Wds.	Wadsworth.

## BASIDIOMYCETES.

### GASTROMYCETES.

#### NIDULARIACEÆ.

- Nidularia pisiformis**, Tul. 1895. On logwood chips near Salterhebble; on twigs, Elland Hall Wood—*H.T.S.*
- Cyathus striatus**, Hoffm. 1788. Hx.—*Bolton*, Tab. 102, f 2.
- C. vernicosus**, DC. 1788. Hx.—*Bolton*, Tab. 102, f 1.
- Crucibulum vulgare**, Tul. 1897-8. On decaying timber, railway bridge, Spring Hall, Hx.—*H.T.S.*!
- Sphærobolus stellatus**, Tode, On moist rotting wood, bark, twigs, etc.; common.

#### LYCOPERDACEÆ.

- Geaster fornicatus**, (Huds.) Fr. 1775. Hx.—*Bolton*, *Cat.*
- G. hygrometricus**, Pers. (*Lycoperdon stellatum*, Bull.) [No. 481. 1775. *J. Bolton*, *Cat.* No. 480. 1790. "Grows on the borders of Swaines Moor, near Halifax, but is rare there." —*Bolton*, Tab. 179.
- Lycoperdon echinatum**, Pers. 1894. Among dead leaves, Pecket Wood—*J.N.*
- L. saccatum**, Vahl. Among grass, Pck. Wd. and Hurst, Wds.—*J.N.*
- L. gemmatum**, Batsch. Mdgh.—*J.N.* Fixby! Lud. Dn.—*Bot. Sec.* Hurst-fields, Wds., Heb. Bdge.—*J.N.*
- L. pyriforme**, Schæff. Hollins, Warley—*Nat.*, Sept. 1892. Cr. Dn., Lud. Dn., Mdgh., Hurst—*J.N.* N. D. Wd., Coley, etc.! In woods and pastures among rotting, moss-covered sticks, grass, etc.
- L. flavosum**, Oed. 1903. Pck. Wd. Among grass—*J.N.* First British record. *Bolton*, Tab. 117 contains a figure much resembling this sp. [*A. Clarke.*
- L. perlatum**, Pers. 1897. Pck. Wd.—*J.N.* El. Pk. Wd.—
- L. cælatum**, Bull. 1899. In field, Mixenden.! Mdgh.—*J.N.*
- L. bovista**, L. (*L. giganteum*, Fl. Dan.) 1775. *J. Bolton*, *Cat.* No. 479, and 1778, Tab. 117, f.a. 1894. Cr. Dn.—*J.N.* Fixby, Lud. Dn! Copley—*C. E. Moss.* In pastures.
- Bovista nigrescens**, Pers. (*Lycoperdon globosum*, Bolton). 1778. *Bolton*, Tab. 118. 1897. Lud. Dn.—*H.T.S.* In pasture.
- B. pusilla**, (Fr.) De Toni. Hx.—*Bolton*, Tab. 117, f.c. 1893. Hurst, Wds.—*J.N.*

## SCLERODERMACEÆ.

**Scleroderma vulgare**, Fr. Hx.—*Bolton*, Tab. 116.

N. D. Wd.—*Nat.*, Oct. 1877. Common, on bare places in all our woods.

**S. bovista**, Fr. 1896. Hdc. 1898. Mdgh.—*J.N.*

## HYMENOGASTRACEÆ.

**Hymenogaster Klotzschii**, Tul. 1899. In sandy soil, Pck. Wood—*J.N.*

## PHALLACEÆ.

**Ithyphallus impudicus**, (L.) Fisch. 1776. "Grows in woods and hedges about Halifax."—*Bolton*, Tab. 91. Since 1891 it has been noted in numerous similar places, also in shrubberies.

**Mutinus caninus**, (Huds.) Fisch. 1790. Hx.—*Bolton*. A drawing (price 19/-) of this species, under the name of Red-headed Morel, is included in a list of paintings of flowering plants, etc., sold by Bolton, 179-. Ovenden—*G. L. Lister*; Heb. Bdge.—*J.N.*, *Nat.*, Sept. 1892.

## HYMENOMYCETES.

## AGARICACEÆ.

## AGARICEÆ.

## LEUCOSPOREÆ.

**Amanita phalloides**, Fr. 1787.—*Bolton*, Tab. 48. N. D. Wd.! Ovenden—*G. L. Lister*; H. Gr., Cr. Dn., Hdc., Pck. Wd., Lud. Dn., Ca. Wd., Stainl., Lea, in Hept., etc.—*J.N.*! Frequent on the ground in woods. Poisonous.

**A. mappa**, (Batsch.) Wade Wood, Lud. Dn.—*J.T.A.* Cr. Dn., Lee, Hept., N. D. Wd., Rough Hey Wd.—*J.N.*! Frequent on the ground in mixed woods. Poisonous.

**A. muscaria**, (L.) Fr. Lud. Dn.—*Nat.* Sept. 1892. Lee, Hept; Mdgh.—*J.N.* Hollock Lea.—*Bot. Sec. Bolton*, Tab. 46 is from specimen collected by him at Mills Bridge, near Huddersfield, n.d.

**A. pantherina**, (DC.) Fr. N. D. Wd.—*Nat.*, Oct. 1877. Spa and Wade Woods, Lud. Dn.! Hebden Bridge—*J.N.* In open woods. Poisonous.

**A. excelsa**, Fr. 1787. Shroggs opposite Birks Hall—*Bolton*, Tab. 47.

**A. rubescens**, Pers. Ruddy Warty Caps. *Bolton*, Tab. 27. Common in moist woods throughout the district. Edible.

**A. spissa**, Fr. 1892-3. Cr. Dn., Hdc.—*J.N.*

**A. nitida**, Fr. Cr. Dn.—*J.N.*, *Nat.*, June 1894.



- A. aspera**, (Pers.) 1790. Near Lee Bridge—*Bolton*, Tab. 139. 1898. Lud. Dn.! *Hx. Nat.*, Vol. III., p. 84.
- Amanitopsis vaginatus**, (Bull) Roze.  
Common on the ground in woods. Distribution general.  
Forma **fulva**. 1892. H. Gr. 1895. Lud. Dn.!
- A. strangulata**, Fr. 1894. Broadbottom, Wds.—*J.N.*
- Lepiota procera**, (Scop.) Hx.—*Bolton*, Tab. 23. El. Pk. Wd.! Hdc., Pck. Wd., Cr. Dn.—*J.N.* Lud. Dn.! Edible.
- L. rachodes**, Vitt. In greenhouse, Well Head! Bermerside—*H. Lawson*. Edible.
- L. acutesquamosa**, (Weinm.) On lawn, Skircoat! Foundry yard, Hebden Bridge—*J.N.*
- L. biornata**, (B. & Br.) In greenhouse, Belle Vue, Hx.!
- L. cristata**, (A. & S.) Hx.—*Bolton*, Tab. 7. Lud. Dn.!
- L. cepæstipes**, (Sow.) 1785. "Amongst the bark in pine-stove, Shay"—*Bolton*, Tab. 50.
- L. lichmophora**, (B. & Br.) In greenhouses, Well Head, Manor Heath, and Bermerside!
- L. carcharias**, (Pers.) In pastures; not uncommon.
- L. granulosa**, (Batsch.) In woods and pastures; not uncommon.
- L. amianthina**, (Scop.) Hx.—*Bolton*, Tab. 51, f 2. Perhaps as frequent as the preceding.
- L. polysticta**, (Berk.) In old pasture, Fixby—*Huddersfield Botanical Society*.
- Armillaria mellea**, (Vahl.) *Bolton*, Tabs. 16, 136, 140, 141. Very common, and most variable in appearance. Often on living tree-trunks and roots. A destructive parasite.  
Var. **laricina**, Fr. *Bolton*, Tab. 19.
- Tricholoma resplendens**, Fr. Lud. Dn.!
- T. flavo-brunneum**, Fr. Hdc., H. Gr.—*J.N.* Catherine House Wood, Lud. Dn.!
- T. albo-brunneum**, (Pers.) Lud. Dn.!
- T. ustale**, Fr. Pck. Wd.—*J.N.* A fine species.
- T. stans**, Fr. Cr. Dn.—*J.N.*!
- T. rutilans**, (Schæff.) 1891. H. Gr., Cr. Dn., Hdc.—*J.N.*
- T. variegatum** (Scop.) 1898. Lud. Dn.!
- T. terreum**, (Schæff.) Cr. Dn.—*J.N.*
- T. saponaceum**, Fr. 1892. N. D. Wd.! Hdc., Cr. Dn., Lud. Dn.—*H.T.S.*! *J.W.S.*
- T. cuneifolium**, Fr. Var. **cinereo-rimosa**, Batsch. Cr. Dn.—*J.N.* Under garden hedge-row, Hx.—*J.W.S.*
- T. inamœnum**, Fr. Lud. Dn.—*H.T.S.*

- T. ionides**, (Bull.) 1787. "Grows under close plantations of fir about Halifax." *Bolton*, Tab. 41, f 3. 1892. Among dead leaves, Cwl. Wd.
- T. carneum**, (Bull.) In pastures. Brookhouse, Ovenden; Lud. Dn.! Mdgh.—*J.N.* Fixby—*U.B.* Stainl.!
- T. gambosum**, Fr. St. George's Mushroom. Pastures in spring. One of the best of edible species. In field near El. Pk. Wd.! Coley—*C. E. Moss.* Skircoat—*H.T.S.* Cr. Dn.—*J.N.*
- T. boreale**, Fr. Cr. Dn.—*J.N.*
- T. arcuatum**, (Bull.) Savile Park—*H.T.S.*
- T. oreinum**, Fr. H. Gr.—*J.N.*
- T. album**, (Schæff.) Hx.—*Bolton*, Tab. 153. [p. 128.]
- T. leucocephalum**, Fr. Savile Park—*J.W.S.*, *Hx. Nat. III.*,
- T. personatum**, Fr. Blewits. Not uncommon in pastures and meadows. Edible.
- T. nudum**, (Bull.) Blue Caps. Hx.—*Bolton*, Tab. 147. Fixby. Kebroyd—*A. Clarke.* Bermerside—*H. Lawson.* Park Nook! In meadows and pastures. Edible.
- T. cinerascens**, (Bull.) Lodge, Hdc.—*J.N.*
- T. panæolum**, Fr. Hurst, Wds.; Lud. Dn.—*J.N.*!
- T. melaleucum**, (Pers.) Lud. Dn.! Foundry yard, Hebden Bridge.—*J.N.*  
Var. **porphyroleucum**, Fr. H. Gr.—*J.N.*
- T. grammopodium**, (Bull.) In pastures, Brookhouse, Ovenden. Hdc.—*J.N.*
- T. brevipes**, (Bull.) Fixby—*Huddersfield Bot. Soc.*
- T. humile**, Fr. In gardens, pastures and open woods. Has been met with in many places.  
Var. **blandus**. Fixby!
- T. subpulverulentum**, (Pers.) In pasture, Lud. Dn.—*H.T.S.*! Hurst, Wds.—*J.N.*
- T. sordidum**, Fr. On dung hill, Heb. Bdg. Ry. Sta.—*J.N.*  
Lud. Dn., Savile Park—*H.T.S.* Fixby!
- Clitocybe nebularis**, (Batsch.) "Grows in the dry parts of woods, and in pastures about Hx., not infrequently"—*Bolton*, Tab. 40. H. Gr., Pck. Wd.—*J.N.* Edible.
- C. venutissima**, Fr. Among dead larch leaves, Hdc.—*J.N.*
- C. odora**, (Bull.) Plantation, Watkinson Hall.—*G. L. Lister.*
- C. cerussata**, Fr. Cragg Vale.—*J.T.A.* [Tab. 17.]
- C. pithyophila**, Fr. 1786. Fixby Hall Fir Woods.—*Bolton*,
- C. candicans**, (Pers.) Lud. Dn. Sun Wood! Cr. Dn.—*J.N.*

- C. dealbata**, (Sow.) Wade Wood, Sun Wood! H. Gr. Pck. Wd.—*J.N.* On dead leaves.
- C. gigantea**, (Sow.) “In several meadows in the neighbourhood of Halifax, this present year, 1793, in Aug. and Sept.....Some measured more than a foot across.”—Unpublished drawing by *Bolton*, in Brit. Museum (Nat. Hist.) considered to represent this species.
- C. infundibuliformis**, (Schæff.) “Grows in low meadows where the grass is deep and the soil rich.”—*Bolton*, Tab. 59. Some authorities consider this Tab. to represent *C. brumalis*; others as above.
- C. geotropa**, (Bull.) Fixby pastures.—*Hud. Bot. Soc.*
- C. ericetorum**, (Bull.) In field, Hept.—*J.N.*
- C. cyathiformis**, Fr. 1790. Hx.—*Bolton*, Tab. 145. Lud. Dn.—*J.W.S.* El. Pk. Wd.—*H.T.S.* Sun Wood!
- C. brumalis**. Fr. Among dead grass and leaves, in woods and field borders. Frequent.
- C. metachroa**, Fr. Among dead leaves, Hurst, Wds.—*J.N.*
- C. ditopa**, Fr. Among dead leaves, N.D. Wd.—*U.B.* Heb. Bdge.—*J.N.*
- C. fragrans**, (Sow.) Pck. Wd.—*J.N.* 1898. In rings in pasture, plentiful, Lud. Dn.—*H.T.S.* Edible.
- Laccaria bella**, (Pers.) N.D. Wd.—*Nat. Sep.*, 1892! Pck. Wd., H. Gr., Cr. Dn., Hdc.—*J.N.*
- L. laccata**, (Scop.) “Old-Lane-Wood, near Halifax, Woodhouse-Wood, and in the plantations about Fixby Hall.”—*Bolton*, Tab. 64. Common, and most variable in form and colour.
- Var. **amethystina**, Bolt. “Grows plentifully in moist, steep, rocky woods about Halifax.”—*Bolton*, Tab. 63. Also unpublished figure, deep blue, in Brit. Mus. (Nat. Hist.) Collection, No. 224, named *Ag. indigoferus*. Cr. Dn.—*J.N.* Lud. Dn.!
- Var. **tortila** Bolt. “Grows in rich garden-mould, about the roots of such plants and shrubs as afford much shade.”—*Bolton*, Tab. 41, f.a.
- Collybia radicata**, (Bull.) Common about old stumps; penetrating deeply by a tough tapering ‘root.’
- C. platyphylla**, Fr. Frequent in woods among dead leaves.
- Var. **repens**, Ach. N. D. Wd.!
- C. fusipes**, (Bull.) 1890. Watkinson Hall plantation—*G. L. Lister*. N. D. Wd.! Edible.
- Var. **œdematopa**, Schæff. Rough Hey Wd.!

- C. maculata**, (A. & S.) Common in woods among dead leaves.
- C. distorta**, Fr. H. Gr.—*J.N.*
- C. butyracea**, (Bull.) Ovenden—*G. L. Lister*. Mdgh.—*J.N.*  
Lud. Dn., Sun Wood! Among dead leaves.
- C. velutipes**, (Curt.) 1789. Southowram—*Bolton*, Tab. 135.  
Parasitic on trees; very common. It also occurs as a  
saprophyte. In 1899 a group was found on a "peggy"  
in a wash kitchen. Remarkable for withstanding  
strong frost.
- C. tuberosa**, (Bull.) N. D. Wd., H. Gr., Mdgh., Cr. Dn.,  
Hdc.—*J.N.* El. Pk. Wd., Fixby! Bn. Cl.—*Hx. Nat.*,  
V., p. 106. Frequent; springing from tuberoid sclero-  
tia among vegetable debris in moist woods.
- C. nummularia**, (Bull.) Booth Wood, Lud. Dn.!
- C. dryophila**, (Bull.) Common in woods among dead leaves.  
[**C. clavus**, (L.) Most likely *Bolton's* Tab. 39, f B, *Agaricus*  
*clavus*, L. (not of Bulliard, as intimated in *Lees' Fl.*, p.  
671) represents *Mycena acicula*.]
- C. muscigena**, (Schum.) Bn. Cl.!
- C. plexipes**, Fr. Rough Hey Wd., Ramsden Wd., on stumps!
- C. ambusta**, Fr. Among dead bracken, Wade Wood!
- C. clusilis**, Fr. Among sphagnum on Langfield, Saltonstall,  
Cockhill and other moors! Always in the company  
of *Pholiota mycenoides*. [4, f 1.
- Mycena pelianthina**, Fr. 1781. Northowram—*Bolton*, Tab.
- M. olivaceomarginata**, Mass. Among short grass. Savile  
Park—*H.T.S.*
- M. pura**, (Pers.) "In a little range of wood, belonging to  
Shibden Hall, Oct. 29th, 1786"—*Bolton*, Tab. 36.
- M. luteoalba**, (*Bolton*). 1787. "Grows common in woods  
near Halifax"—*Bolton*, Tab. 38, f. 1. Fixby!
- M. lactea**, Pers. Cr. Dn., H. Gr., Hurst—*J.N.* Lud. Dn.!
- M. rugosa**, Fr. Frequent on stumps in woods.
- M. galericulata**, (Scop.) Very common on stumps.  
Var. **calopoda**, B. & Br. Wade Wood—*J.T.A.* Pck.  
Wd., H. Gr.—*J.N.* N. D. Wd.!
- M. polygramma**, (Bull.) On old rotting beam, Heath! Heb-  
den Bridge—*J.N.* Birk Wd., Southowram, N. D. Wd!
- M. atroalba**, (*Bolton*) "Grows amongst moss about the roots  
of trees, Halifax, but rarely"—*Bolton*, 1789, Tab. 137.
- M. pullata**, (Berk. & Ck.) Lightcliffe, El. Pk. Wd.! Cr.  
Dn.—*J.N.* Lud. Dn.

- M. dissiliens**, Fr. 1790. "On decaying trunks of fallen trees, Halifax,"—*Bolton*, Tab. 154. Hollins, Warley! Ca. Wd., H. Gr.—*J.N.* Sun Wood! [Hdc.—*J.N.*
- M. atrocyanea**, (Batsch.) Lud. Dn., N. D. Wd.—*H.T.S.*!
- M. leptcephala**, Pers. In plantation, Ovenden—*G. L. Lister*.
- M. alkalina**, Fr. On dead wood, Ovenden. N. D. Wd.—*J.W.S.* H. Gr.—*J.N.*
- M. ammoniaca**, Fr. El. Pk. Wd., Lud. Dn.! Savile Park—*H.T.S.* Cr. Dn.—*J.N.*
- M. ætites**, Fr. Among moss. High Lee Cl., Norland!
- M. stannea**, Fr. Hdc.—*J.N.*
- M. tenuis** (Bolton). "Grows in the deep, moist and shady parts of woods; in a little wood near Lee Bridge; Woodhouse Wood; North Dean; and several other like places near Halifax, 1783"—*Bolton*, Tab. 37.
- M. filopes**, (Bull.) N. D. Wd.—*Nat.*, Oct. 1877.
- M. amicta**, Fr. 1889. About the roots of *Nardus stricta*, mooredge above Turner Clough, Rishworth!
- M. vitilis**, Fr. In wood, Cr. Dn.—*J.N.*
- M. acicula**, (Schæff.) H. Gr., Mdgh., Cr. Dn., El. Pk. Wd.!
- M. sanguinolenta**, (A. & S.) Common among dead leaves in damp woods.
- M. galopoda**, Fr. Common, in similar situations.
- M. epipterygea**, (Scop.) "Under the fir trees in the plantation near Fixby Hall"—*Bolton*, unpublished Tab. in Brit. Mus. (Nat. Hist.) collection no. 350. Norland—*Nat.*, Sept. 1892. Cr. Dn., Hurst, H. Gr., Hdc.—*J.N.* Lud. Dn., El. Pk. Wd. side, Stainl., etc.!
- M. pelliculosa**, Fr. Cr. Dn.—*H.T.S.*, *J.N.* Fixby!
- M. stylobates**, Pers. On dead herbaceous stems. El. Pk. Wd., Lud. Dn.! Hdc.—*J.N.*
- M. saccharifera**, (B. & Br.) On dead herb. stems. El. Pk. Wd., Wade Wood, Lud. Dn.—*Hx. Nat.*, III., p. 85.
- M. discopoda**, Lev. Cr. Dn., on dead twigs—*J.N.*
- M. capillaris**, (Schum.) On dead beech-leaves, Cr. Dn.—*J.N.*
- Omphalia sphagnicola**, (Berk.) Beaumont Clough; Grain Slack Moor, Wds.! On sphagnum. [Bdg.—*J.N.*
- O. philonotis**, (Lasch.) On moss near water trough, Heb.
- O. umbellifera**, (L.) N. D. Wd., Hdc., Pck. Wd., Cr. Dn.—*J.N.* Sun Wood, etc.!
- O. stellata**, (Sow) On wood. El. Pk. Wd.! Mdgh.—*J.N.*
- O. campanella**, (Batsch.) N. D. Wd., Lud. Dn.!
- O. grisea**, Fr. In mixed woods. Heb. Bdge., H. Gr.—*J.N.*

- O. fibula**, Bull. Common on mossy banks in woods, etc. Has been found on Midgley Moor at 1450 ft. alt.  
 Var. **Swartzii**, Fr. On butter-bur bed, Elland; Lud. Dn.
- O. belliaë**, Johnst. H. Gr.—*J.N.*
- O. gracillima**, (Weinm.) On decayed stems of *Carex pendula*, El. Pk. Wd. A delicate species.
- O. integrella**, (Pers.) On decaying grass, etc. Broad bottom, Wds., Pck. Wd., H. Gr., Beaumont Cl., El. Pk. Wd.
- Pleurotus fimbriatus**, (Bolton). 1787. "Stump Wood, Northowram, and in several moist woods about Halifax."—*Bolton*, Tab. 61.
- P. ostreatus**, Jacq. Oyster Mushroom. Edible.  
 Lud. Dn., and one or two other places, not common.  
 Var. **columbinus**, Quel. On living laburnum from slit in trunk, Skircoat. On ash, Heath. *Hx. Nat.* III., p. 128. Greetland—*West Vale Nat. Soc.* [Hx!]
- P. salignus**, (Pers.) On tree stumps, Lee, Hept.—*J.N.* Heath,
- P. serotinus**, (Schrad.) 1892. On base of stile-post, N.D. Wd. *U.B.* This came up eight seasons in succession.
- P. mitis**, (Pers.) 1903. On wet ash board near water tap in cellar at my place of business!
- P. reniformis**, Fr. On dead twig buried in moss, N.D. Wd.!
- P. tremulus**. Fr. On the ground under elder, El. Pk. Wd.—*H.T.S.*
- P. acerosus**, Fr. "Growing erect on the ground, in a steep field by the footway leading from Elland to Mills Bridge, in Oct., 1787." *Bolton*, Tab. 72. f. 3. Probably the Ainleys.
- P. septicus**, Fr. On bark, Sun Wd.; on grass, El. Pk. Wd.; N.D. Wd. on flax backing, cast-out hearth rug, Pck. Wd.; on leaves, Mdgh. Wd.—*J.N.*
- P. hypnophilus**, (Berk.) On dead grass, H. Gr.—*J.N.*
- P. chioneus**, (Pers.) El. Pk. Wd. Pck. Wd.—*J.N.*

## RHODOSPORÆ.

- Volvaria gloiocephala**, DC. "This species is rare about Halifax; it grows in woods in shady moist places..... Ramsden Wood, Sep. 27, 1787."—*Bolton*, Tab. 49. "Beside the water-gate in the wood called Burks, near Hx., Sep., 1794."—*Bolton*, unpublished Tab. in Brit. Mus. (Hat. Hist.) Collection no. 455. Mr. Worthington G. Smith considers both these plates to represent the above, and remarks, "The glutinous pileus and solid

stem in both are to me decisive." Some mycologists hold that Tab. 49 represents *Amanitopsis vaginatus*. In both cases Bolton says distinctly "pileus glutinous and stem solid."

- Pluteus cervinus**, (Schæff.) Bolton, Tab. 2. Common about old stumps and rotting tree trunks.
- Entoloma prunuloides**, Fr. Among grass in damp places. Strines, Stansfield; H. G., Cr. Dn., Hdc.—*J.N.* Shelf!
- E. jubatum**, Fr. Frequent in upland pastures. Fixby, Lud. Dn., Hollin Hey, Stainl.! Mdgh., Cr. Dn.—*J.N.*
- E. sericellum**, Fr. In pastures. Hurst, Mdgh.—*J.N.* N.D. Wd., Lud. Dn.! [*Bolton*, Tab. 69.]
- E. clypeatum**. "Bracken-Bed-Wood, near Halifax, 1787."—
- E. rhodopolium**, Fr. "Grows in the shady parts of woods in the neighbourhood of Halifax."—*Bolton*, Tab. 6. Hollin Hey, Stainland!
- E. sericeum**, (Bull.) Very common in pastures.
- E. nidorosum**, Fr. In pastures, Hurst, H. Gr., Cr. Dn.—*J.N.*
- Clitopilus prunulus**, (Scop.) In pastures, Mdgh., Cr. Dn.
- C. orcella**, (Bull.) Sweet-bread. On grassy banks. Lee, H. Gr., Mdgh., Hawden-hole.—*J.N.*
- C. cretatus**, B. and Br. Cr. Dn.—*J.N.* Lud. Dn.!
- C. cancrinus**, Fr. Cr. Dn.—*J.N.*
- C. vilis**, Fr. Cr. Dn.—*J.N.*
- Leptonia lampropoda**, Fr. Not infrequent in upland pastures. Acre, Hept., Hurst, Cr. Dn.—*J.N.* Fixby, moor-edge pasture, Lud. Dn., Norland, etc.!
- L. serrulata**, (Pers.) Hollin Hall, Cr. Dn.—*J.N.*!
- L. chalybea**, (Pers.) Lud. Dn.!
- L. luzulina**, Fr. Among moss, Cr. Dn.—*J.N.*
- L. incana**, Fr. Cr. Dn.—*J.N.*
- L. chloropolius**, Fr. Heb. Bridge.—*H.T.S.*
- L. asprella**, Fr. Among grass. Lud. Dn.—*Hx. Nat.* III., p. 85.
- Nolanea pascua**, Fr. "Grows in the Shroggs, the Burks, the North Dean, and several other woods about Hx., 1787."—*Bolton*, Tab. 35. Common in meadows, pastures, and open, grassy woods.
- N. mammosa**, (L.) Cr. Dn.—*H.T.S.*, *J.N.* Lud. Dn.!
- N. pisciodora**, (Ces.) In grassy places, Ashday, Southowram.! Fixby.—*U.B.* Garden, Clover Hill.—*H.T.S.*
- N. rufo-carnea**, (Berk.) H. Gr.—*J.N.*
- N. icterina**, Fr. Heb. Bridge.—*H.T.S.*, *J.N.* [—*H.T.S.*]
- Eccilia atropuncta**, (Pers.) On butter-bur bed, El. Pk. Wd.



**Claudopus variabilis**, (Pers.) “On small putrid branches in the dark part of Elland Park (Wood.)”—*Bolton*, unpublished Tab., Brit. Mus. (Nat. Hist.) collection, (No. 553.) Not uncommon on dead twigs of various kinds, holly leaves, and herbaceous stems.

**C. byssisedus**, (Pers.) On bare soil, Lud. Dn.—*H.T.S.!*

OCHROSPORÆ.

**Pholiota erebia**, Fr. Plantation, Manor Heath! Heb. Bridge—*J.N.* Clover Hill.—*H.T.S.* Hollin Hey, Stainland.!

**P. ombrophila**, Fr. Heb. Bridge.—*J.N.*, *Hx. Nat.* VI., p. 124.

**P. togularis**, (Bull.) El. Pk. Wd.—*H.T.S.*

**P. dura**, (Bolt.) Halifax.—*Bolton*, Tab. 67, f. 1. Also unpublished Tab., Brit. Mus. (Nat. Hist.) collection, (No. 555.) Specimen from which this drawing was made found “In the Shroggs, Sep. 1794.” Recently rediscovered at Hx. in the shrubbery, Bermerside, by Mr. H. Lawson, gardener, and in a corn field near Park Nook!

**P. præcox**, (Pars.) Among grass, in early summer, Ovenden.—*G. L. Lister.* El. Pk. Wd., Lightcliffe, Skircoat! Cr. Dn.—*J.N.* El. Hall Wd.—*H.T.S.* Lud. Dn.—*Bot. Sec.*

**P. comosa**, Fr. “Grows under the roots of trees where the soil is dry,.....in great plenty in Oct. 1786, in the dry and steep part of the wood called Ramsden.”—*Bolton*, Tab. 42.

**P. aurivellus**, (Batsch.) N.D. Wd.—*J.T.A.!* On stump, Heath.—*G. Harding.*

**P. squarrosa**, (Müll.) A semi-parasite on and about the trunk-base of trees, especially ash and laburnum; also on stumps. Heb. Bridge, Hurst.—*J.N.* Ovenden, Sun Wd., Well Head, Hx., on ash eight years in succession.—*vide Hx. Nat.*, VI., pp. 108-9. Fixby and Kebroyd, on ash.—*A. Clarke.* Garden, Savile Park! and Belle Vue, on laburnum.—*J. H. Bolton.*

Var **Mullerii**, Fr. Mdgh.—*J.N.*

**P. spectabilis**, Fr. On trunk, Midgley; on log, El. Pk. Wd. ! Pck. Wd.—*J.N.*

**P. dissimulans**, (B. and Br.) Nut Clough, Heb. Bdge.—*J.N.*

**P. mutabilis**. Fr. On stumps, N. D. Wd., Ovenden.—*G. L. Lister.* Callis Wd.—*J.N.* Spa Wood. Lud. Dn.!

**P. mustelina**, Fr. Under bramble bush, canal bank, below Salterhebble; on rotting stump, Spa Wood, Lud. Dn.!

**P. pumila**, Fr. Heb. Bridge.—*J.N.*

- P. mycenoides**, Fr. On sphagnum beds, Widdop, Cockhill Moor, Saltonstall Moor, etc., almost always with *Collybia*
- Inocybe hystrix** Fr. H. Gr.—*J.N.* [*clusilis*.]
- I. reclinata** Fr. H. Gr.—*J.N.*
- I. calamistrata**, Fr. H. Gr., Pck. Wd.—*J.N.*
- I. lanuginosa**, (Bull.) Heb. Bdge.—*J.N.*
- I. plumosa**, (Bolt.) “This curious and beautiful Agaric, I gathered in a little steep wood, belonging to the farm called Ramsden, in the township of Ovenden, Aug. 1787”—*Bolton*, Tab. 33.
- I. scaber**, (Müll) Halifax, 1794—*Bolton*, unpublished Tab. Brit. Mus. (Nat. His.) collection (No. 610). H. Gr.—*J.N.*
- I. flocculosa**, (Berk.) Lee, Hept.—*J.N.* On bare ground.
- I. lacera**, Fr. Lee, Hept.—*J.N.*
- I. obscura**, (Pers.) Lee, Hept., Pck. Wd.—*J.N.*
- I. hiulca**, Fr. Lud. Dn.—*A. Clarke*.
- I. rimosa**, (Bull.) N. D. Wd.—*Nat.*, Oct. 1877. H. Gr. Lee, Hept.—*J.N.* Sun Wd.; shrubbery, Abbots Ladies' Homes; plantation, Manor Heath; Woodhouse Wood; Hollin Hey, Stainl.!
- I. asterospora**, (Quel.) In similar situations to *rimosa* but much commoner, and met with in many additional places.
- I. eutheles**, (B. & Br.) On the ground among pines. Cr. Dn.—*J.N.*
- I. destriata**, Fr. Among pines, Hdc. and Cr. Dn.—*J.N.*
- I. geophylla**, (Sow.) Hurst, Wds.—*J.N.* N. D. Wd., Bn. Cl.!
- Hebeloma fastibile**, Fr. On cast-out cloth hearthrug, Pck. Wd. corner.—*J.N.*
- H. mesophæum**, Fr. Same place as *fastibile*; Mdgh.—*J.N.*
- H. crustulineforme**, (Bull.) Cr. Dn., Pck. Wd.—*J.N.*  
Var *minor*, Cke. H. Gr.—*J.N.*
- H. longicaudum**, (Pers.) El. Pk. Wd.—*J.W.S.*
- H. ischnostylum**, Cke. Hollin Hey, Stainl.!
- Flammula lenta**, (Pers.) Fixby.
- F. spumosa**, Fr. N. D. Wd.—*Nat.*, Sept. 1892.
- F. carbonaria**, Fr. On charred ground, El. Pk. Wd.!  
Foundry yard, Hebden Bridge.—*J.N.*
- F. fusus**, (Batsch.) “Grows in woods about Halifax, frequent in Sept. and Oct.”—*Bolton*, Tab. 5.
- F. hybrida**, Fr. On stump, Ovenden—*Nat.*, Dec. 1890.
- F. inopoda**, Fr. “Plantation, Fixby Hall, 1790”—*Bolton*, Tab. 148. See Stevenson's British Fungi, Vol. I., pp. 271-2. Hebden Bridge—*J.N.*

- F. sapinea**, Fr. Not uncommon on pine and other stumps and logs. Cr. Dn., Hdc., Pck. Wd.—*J.N.* N. D. Wd., El. Pk. Wd.! Bn. Cl.—*C. E. Moss.*
- Var. **terrestris**, Fr. What we take to be this var. is common on the moors among dead ling and bilberry stems in July, August, and September.
- Naucoria cucumis**, (Pers.) Lud. Dn.; garden, Clover Hill—
- N. cerodes**, Fr. On burnt soil, Pck. Wd.—*J.N.* [*H.T.S.*]
- N. melinoides**, Fr. Lud. Dn.
- N. nucea**, (Bolt.) “This species came up in abundance among the young fir trees in the new plantation near Mount Pellon in Oct. 1787. I have seen it in other places, in dry and barren soils, among heath and furze bushes”—*Bolton*, Tab. 70. “A wholly abnormal species, but the Swedish, Russian, and Scotch specimens agree so exactly that it seems quite typical”—*Stevenson’s Brit. Fungi*, Vol. I., p. 281.
- N. striæpes**, Cke. Among grass on soil heap, El. Pk. Wd.!
- N. pediades**, Fr. On lawn, Abbots Ladies’ Homes!
- N. semiorbicularis**, (Bull.) H. Gr.; field, Shaw Syke—*H.T.S.* Spa Wood. Lud. Dn.! Hurst—*J.N.*
- N. escharoides**, Fr. Lud. Dn.!
- N. graminicola**, (Nees.) On dead grass and rush stems, Hdc.—*J.N.* El. Pk. Wd.—*H.T.S.*!
- Galera tenera**, (Schæff.) Common in pastures, open woods, meadows, and on grassy road-sides. “Grows in fallowed fields, where the weeds have been burnt, in woods, or places where charcoal has lately been made”—*Bolton*; Tab. 66, f. 2.
- G. ovalis**, Fr. Cr. Dn., Pck. Wd.—*J.N.* In pasture, Warley, in great quantity, Oct. 1898—*H.T.S.* Norland, Hullen Edge, Hollin Hey Stainl., Lud. Dn. On lawn, Berrmerside—*H. Lawson.*
- G. conferta**, (Bolt.) Fr. “Grows amongst the bark in hot-houses; in the Pine-Stove of J. Caygill, Esq., Hx., Nov. 1785”—*Bolton*, Tab. 18.
- G. sparteæ**, Fr. “Grows in dry and barren pasture grounds amongst various kinds of moss”—*Bolton*, Tab. 51, f. 1. Brookhouse, Ovenden; Lud. Dn.! Mdgh.—*J.N.*
- G. hypnorum**, (Batsch.) Common on shaded mossy banks from May to Dec. Constantly grows among moss. I have gathered it on beds of *Webera nutans*, *Dicranella*

*heteromalla*, *Mnium hornum*, *Plagiothecium Borrerianum*,  
*Tetraphis pellucida*, and on several species of hepatics.

**G. minuta**, (Quel.) Lud. Dn. [See *Hx. Nat.*, V., p. 106.

**G. mycenopsis**, Fr. On dead moss. Hdc.—*J.N.*

**Tubaria furfuracea**, (Pers.) On the ground in woods among  
dead twigs. Ashday Hall, El. Pk. Wd. ! Pck. Wd.,  
H. Gr.—*J.N.* Tag lock—*H.T.S.* Lud. Dn., Bn. Cl. !

Var. **trigonophyllus**, Lasch. Mdgh.—*J.N.*

**T. inquilina**, Fr. Ovenden—*G. L. Lister*. Cr. Dn.—*J.N.*

**Crepidotus mollis**, (Schæff.) “On the decaying stock of an  
elm tree, Aug. 1779”—*Bolton*, Tab. 71, f. 2. On  
decaying trunks, N. D. Wd. ! Heb. Bdge.—*J.N.*

**Bolbitius flavidus**, (Bolt.) Fr. “On dunghills after rain, in  
June and July”—*Bolton*, Tab. 149. See *Masse's Brit.*  
*Fung. Fl.* II., p. 204. On rotting hearthrug in damp  
corner of Pecket Wd.—*J.N.*

**B. fragilis**. Fr. “Grows in meadows and pasture grounds  
about Halifax”—*Bolton*, Tab. 65. Fixby ! [*Lawson*.

**B. titubans**, Fr. 1902. On mushroom-bed, Bermerside—*H.*

**Cortinarius (Phlegmacium) sebaceus**, Fr. H. Gr.—*J.N.*

**C. (Phleg.) cyanopus**, Fr. H. Gr.—*J.N.*

**C. (Phleg.) largus**, Fr. Hdc.—*J.N.* [Wd. !

**C. (Phleg.) purpurescens**, Fr. Ovenden, H. Gr.—*J.N.* Cwl.

**C. (Phleg.) decolorans**, Fr. Among firs, H. Gr.—*J.N.*

**C. (Myxacium) collinitus**, Fr. N. D. Wd. !

**C. (Myx.) elatior**, Fr. “In the wood called Wheatley  
Shroggs, near Halifax, Sept. 15, 1794”—*Bolton*, un-  
published Tab. 221 in *Brit. Mus. (Nat. Hist.)* collection.  
(No. 1025). Frequent in the woods to the S. and W.  
of Hx. ; also seen in Sun Wd. !

**C. (Inoloma) opimus**, Fr. Hdc.—*J.N.*

**C. (Inol.) violaceus**, (L.) H. Gr.—*J.N.*

**C. (Inol.) alboviolaceus**, (Pers.) Under beech, Hdc.—*J.N.*

**C. (Inol.) malachus**, Fr. H. Gr.—*J.N.*

**C. (Inol.) hircinus**, Fr. *Hym. Eur.*, p. 362. “Grows in  
Woodhouse Wood, and some other woods about Hx. in  
Aug. and Sept., but not plentifully”—*Bolton*, Tab. 52.  
“As a British species this rests entirely on Bolton's  
figure.”—*Cooke's Hdbk. to Ills.* “In fir woods, foetid.  
This species is founded on Bolton's figure”—*W. G.*  
*Smith, Supp. Brit. Fungology.*

**C. (Inol.) callisteus**, Fr. H. Gr.—*J.N.*, *H.T.S.*

**C. (Inol.) Bulliardii**, Fr. Sun Wd. !

- C. (Inol.) sublanatus**, Fr. 1903. H. Gr.—*J.N.*
- C. (Inol.) penicillatus**, Fr. H. Gr.—*J.N.*
- C. (Dermocybe) ochroleucus**, (Schæff.) H. Gr.—*J.N.*
- C. (Dermo.) camurus**, Fr. H. Gr., Cr. Dn.—*J.N.!*
- C. (Dermo.) sanguineus**, Fr. Hdc., Mdgh., Cr. Dn.—*J.N.!*
- C. (Dermo.) cinnamomeus**, (L.) "Grows in woods about Halifax, but is rare, Nov. 1760"—*Bolton*, Tab. 150. Lee, Hept., H. Gr., Pck. Wd.—*J.N.!*
- Var. **semisanguineus**, Fr. H. Gr., Pck. Wd.—*J.N.*
- C. (Telamonia) torvus**, Fr. Pck. Wd., H. Gr.—*J.N.*
- C. (Tela.) armillatus**, Fr. N. D. Wd.—*U.B.* Heb. Bdge.—*J.N.* Wade Wood, Lud. Dn. At one place under hazel bushes six years in succession, 1893-98, in Sept. First and second years in great abundance over an area of four to five square yards, afterwards gradually diminishing in quantity each season until they altogether disappeared. Not seen there since 1898.—*J.W.S.*
- C. (Tela.) limonius**, Fr. Cr. Dn.—*H.T.S., J.N.*
- C. (Tela.) hinnuleus**, Fr. Pck. Wd., Tippet-holme, Hdc., H. Gr.—*J.N.!*
- C. (Tela.) injucundus**, Weinm. H. Gr.—*J.N.!*
- C. (Tela.) rigidus**, Fr. Pck. Wd.—*J.N.* Strong scented.
- C. (Tela.) paleaceus**, Fr. H. Gr.—*J.N.*
- C. (Hygrocybe) dilutus**, (Pers.) "This is a rare species; I have only seen it in two or three places, particularly in a little wood called Bracken-Bed-Wood, in Ovenden, where I gathered the specimen.....figured and described, in Oct. 1786"—*Bolton*, Tab. 10,
- C. (Hygr.) saturninus**, Fr. H. Gr.—*J.N.*
- C. (Hygr.) castaneus**, (Bull.) Pck. Wd., H. Gr.—*J.N.* Lud. Dn.!
- C. (Hygr.) bicolor**, Cook. Hdc.—*J.N.!*
- C. (Hygr.) jubarinus**, Fr. Pck. Wd.—*J.N.*
- C. (Hygr.) irregularis**, (Bolt.) Hym. Eur. p. 394. "Grows in dry and barren pasture and meadow ground, about Halifax in great plenty, in Aug. and Sep."—*Bolton*,
- C. (Hygr.) decipiens**, (Pers.) Cr. Dn.—*J.N.!* [Tab. 13.
- C. (Hygr.) acutus**, (Pers.) Lee, H. Gr.—*J.N.*

## MELANOSPOREÆ.

**Agaricus campestris**, L. Mushroom. "Grows in pasture grounds, after much rain, in July and Aug., not in plenty about Halifax."—*Bolton*, Tab. 45. Still uncommon in the pastures and meadows of this district.

Var **sylvicola** Vitt. On soil heap, Savile Park.—*J.W.S.!*

Var **pratensis** Vitt. Mdgh.—*J.N.*

**A. arvensis**, Schæff. Horse Mushroom. Not common. Edible.

**A. sylvaticus**, Schæff. Heb. Bdge., Pck. Wd.—*J.N.* Edible.

**Stropharia æruginosa**, (Curt.) “Under fir trees in the plantations about Fixby Hall, and elsewhere.”—*Bolton*, Tab. 30. “Grew in Mr. Pollard’s garden, at Stannary, Nov. 12th, 1790.”—*Bolton*, Tab. 143. Frequent in moist shady places in fir or mixed woods, where it attains its highest perfection; occasionally in field corners, or on lawns, or in gardens; has also been found at base of wall in unpaved stable yard in the heart of the town. Places where noted too numerous to detail. Slightly variable in appearance according to situation.

**S. albocyanea**. (Desm.) In meadows and pastures. Cr. Dn., Mdgh.—*J.N.* Lud. Dn.—*H.T.S.* Warley.—*J.W.S.* Field, El. Pk. Wd., Fixby; Hollin Hey, Stainl.!

**S. inuncta**, Fr. Field near Elland Station.—*H.T.S.* Lightcliffe.

**S. squamosa**, Fr. N. D. Wd.—*H.T.S.*, *U.B.*!

**S. merdaria**, Fr. On road scrapings, Skircoat road embankment. On horse dung, Hollock Lee, Lightcliffe, Lud. Dn. ! Tippetholme.—*J.N.*

**S. stercoraria**, Fr. On dung in fields, Ovenden, Lud. Dn. Stainl. ! Cr. Dn.—*J.N.*

**S. semiglobata**, (Batsch.) Grows on cattle dung everywhere, the greater part of the year.

**Hypholoma sublateritium**, (Schæff.) Frequent on stumps nearly the year round. Cr. Dn., Hdc., Mdgh., H. Gr.—*J.N.* N. D. Wd., Lud. Dn., Fixby, El. Pk. Wd., Cwl. Wd., etc. ! Hipperholme.—*H.T.S.*

**H. epixanthum**, Fr. On stumps. Mdgh., Hdc.—*J.N.*!

**H. fascicularis**, (Huds.) “Grows on putrid wood, or on the ground amongst timber in wood-yards, or near the roots of trees, about Hx. plentifully.”—*Bolton*, Tab. 29. Common everywhere, most of the year, on dead stumps and logs.

**H. elæodes**, (Bull.) Lud. Dn.—*H.T.S.* Heb. Bdge, Hdc.—*J.N.* N. D. Wd.!

**H. lachrymabundus**, (Bulliard non Fries). On rich ground. Lud. Dn. ! Heath—*U.B.* Hurst, Hdc.—*J.N.* Fixby, Warehouse-yard, Hx.—*H.T.S.* This includes former records of *H. velutinus*.

**H. Candolleana**, Fr. “In plenty in a place of shrubs called Common Wood, Northowram, Sept. 1794”—*Bolton*,



unpublished Tab. in Brit. Mus. (Nat. Hist.) collection (*Ag. boeticus*.) N. D. Wd.—*J.T.A.* Hdc.—*J.N.* Kebroyd—*A. Clarke*.

- H. appendiculatum**, (Bull.) Heb. Bdge.—*J.N.* N. D. Wd.!
- H. hydrophilum**, (Bull.) “I gathered specimens of it in the wood at the top of the precipice opposite the Burks Hall, near Halifax—*Bolton*, unpublished Tab. 303 in Brit. Mus. (Nat. Hist.) collection (No. 843). On stump Cragg Vale—*J.T.A.* Hdc.—*J.N.*”
- Psilocybe sarcocephala**, Fr. Heb. Bdge.—*J.N.* Fine specimens near old stump, El. Pk. Wd.—*J.W.S.*
- P. subericea**, Fr. Booth Wood, Lud. Dn.!
- P. udus**, (Pers.) Among sphagnum and other moss, etc., in damp places. Hurst, Cr. Dn., Hdc., Hawden-hole—*J.N.* N. D. Wd., Grain Farm, top Cr. Dn.!
- P. semilanceata**, Fr. Liberty Cap. Common in pastures and meadows, on lawns, grassy road-sides, or woods.
- P. spadicea**, Fr. On rotting stumps. Pck. Wd., Hdc.—*J.N.* Thornhill Briggs.—*Bot. Sec.*
- Var. **polycephala** Fr. “Grows in the shady parts of woods, on the decaying roots of fallen trees, about Halifax, in several places.”—*Bolton*, Tab. 11. [*J.N.*]
- P. cernua**, (Müll.) In fragile fascicles on rotting wood, Hept.—
- P. fœnisecii**, (Pers.) Common in rich meadows and pastures; often on lawns, and in open grassy woods.
- P. clivensis**, (B. & Br.) Nut Clough, Heb. Bdge.—*J.N.*
- Psathyra corrugis**, (Pers.) Frequent in pastures, etc. Field near El. Pk. Wd., H. Gr., Foundry-yard, Heb. Bdge., Ca. Wd., Cr. Dn.—*J.N.*! Tag-lock—*H.T.S.* Salter-hebble, Stainl.!
- P. spadiceo-grisea**, (Schæff.) On twigs, El. Pk. Wd.!
- P. bifrons**, (B. & Br.) H. Gr.—*H.T.S.*, *J.N.* [*J.N.*]
- P. semivestita**, (B. & Br.) El. Pk. Wd.—*H.T.S.*! Hdc.—
- P. fibrillosa**, (Pers.) Among dead leaves, El. Pk. Wd.—*H.T.S.*
- P. pennata**, Fr. On rich, loose soil in woods. El. Pk. Wd., Lud. Dn.! H. Gr., Hdc. Pck. Wd., etc.—*J.N.* N. D. Wd.—*J.W.S.*
- P. gossipina**, (Bull.) In moist corner, N. D. Wd.—*H.T.S.*!
- Anellaria separata**, (L.) Karst. Common on cattle dung almost anywhere; grows finely on the moor-edges.
- Var. **scutula**, Masee. Lud. Dn.—*H.T.S.*!
- A. fimiputris**, (Bull.) *Bolton*, Tab. 57. On dung in pastures, etc.; common.



- Panæolus leucophanes**, (B. & Br.) Among grass, Savile Park—*H.T.S.*
- P. phalænarum**, (Bull.) On cattle dung in pastures. Frequent.
- P. retirugis**, Fr. In pastures: Lud. Dn.; Hollin Hey, Stainl.!
- P. spinctrinus**, Fr. In pastures: Lightcliffe, Luddenden Dean, Crimsworth Dean!
- P. campanulatus**, (L.) Not uncommon in pastures.
- P. papilionaceus**, Fr. Pastures, grassy road sides, etc. Skircoat; Stainl.; Hurst; Hipping-end, Heb. Bdge.—*J.N.*
- P. fimicola**, Fr. "Grows amongst the grass in pasture grounds in Oct.," Hx.—*Bolton*, Tab. 66, f. 1.
- P. cinctulus**, (Bolt.) "Grows on dung hills after rain, in June and July. Gathered specimen figured and described, June 25, 1789"—*Bolton*, Tab. 152. *Fr. Hym. Eur.*, p. 312.
- Psathyrella subatrata**, Fr. Among grass, El. Pk. Wd.!
- P. gracilis**, Fr. Field, H. Gr.—*J.N.*
- P. disseminata**, (Pers.) Grows in crowds on and about mossy, decaying stumps. El. Pk. Wd.! Lud. Dn.—*J.W.S.* Pck. Wd., H. Gr.—*J.N.* Ovenden—*G. L. Lister.*
- P. atomata**, Fr. Common in fields, on grassy road sides, lawns, etc.
- Coprinus comatus**. Shaggy Caps. "Grows in sand besides grass-beds, and by paths near towns and villages, in Sept. and Oct."—*Bolton*, Tab. 44. Common on lawns, grassy road sides, waste places, tips., etc., never far away from town or village. One of the best of edible sp., and much sought after where its esculent qualities are known.
- C. ovatus**, Schæff. Heb. Bdg., Skircoat, 1892. Edible.
- C. sterquilinus**, Fr. Heb. Bdge., Southowram, Lud. Dn.!
- C. oblectus**, (Bolton) Fr. "Grows on new dung hills; but is rare about Halifax, 1790"—*Bolton*, Tab. 142. Not met with again in England, to be known, until October 1892, when it was re-discovered at Halifax on street-sweepings and refuse tip—*Nat.*, Dec. 1892. Since found near stables at Heb. Bdg., Brearley, Rishworth, and Lud. Dn.—*J.N.*!
- C. atramentarius**, Fr. "Grows on Gibbett Hill, and in some other places near Halifax, 1787"—*Bolton*, Tab. 25. Frequent about moist decayed stumps, posts, etc.
- C. apthosus**, Fr. "Grows on decaying pieces of moist wood, in cellars, cold kitchens, etc., in plenty," Halifax—*Bolton*, Tab. 26.

- C. flocculosus**, DC. Lud. Dn.—*J.W.S.*
- C. similis**, B. & Br. On rotting tree-trunk, Bn. Cl. 1891!
- C. extinatorius**, (L.) "Grows amongst sand, in moist and shady situations about Hx. but rare"—*Bolton*, Tab. 24.
- C. fimetarius**, (L.) On manure-and-soil heap, Savile Pk.—*H.T.S.* Ovenden—*Nat.*, Sept. 1892. Sowerby Bdg.!
- Var. **pullatus**, Bolt. "Grows on dunghills, or in fat meadows, 1786"—*Bolton*, Tab. 20.
- Var. **cinereus**, Schæff. On rotten sacking, Lud. Dn.!
- C. tomentosus**, (Bull.) "Ogden-kirk, amongst wet moss, in the ground where peat is dug for fuel, 1790"—*Bolton*, Tab. 156. Park Nook, Southowram, 1895!
- C. niveus**, Pers. "Lea Bridge, near Hx., 1792"—*Bolton*, unpublished Tab. 205, Brit. Mus. (Nat. Hist.) collection (No. 936). Common on horse-manure heaps and rich soil.
- C. micaceus**, (Bull.) "Sometimes in vast clusters on wet decayed wood," Hx.—*Bolton*, Tab. 54. Common!
- C. Hendersoni**, Berk. On cow-dung, Lud. Dn.—*H.T.S.*
- C. volvaceo-minimus**, Crossl. On manure heap, Well Head; first record—*Nat.*, Dec. 1892. The smallest known *Coprinus* with a distinct volva.
- C. lagopus**, Fr. In wet corner, Mdgh. Wd., 1893—*J.N.*!
- C. narcoticus**, Fr. Dudwell Wood, 1898—*H.T.S.*
- C. radiatus**, (Bolt.) *Bolton*, Tab. 39c. Common.
- C. domesticus**, Pers. On old carpet, N. D. Wd., 1895!
- C. stercorarius**, (Bull.) On manure heap, Hept., etc.—*J.N.*
- C. ephemerus**, Fr. On manure heaps. Frequent.
- C. plicatilis**, Curt. Common in meadows and pastures.
- C. hemerobius**, Fr. "Grows in meadows where the soil is rich, Sept. and Oct., about Halifax, plentifully"—*Bolton*, Tab. 31.

## PAXILLEÆ.

- Paxillus paradoxus**, Kalch. Heb. Bdg. 1895—*J.N.*
- P. involutus**, Batsch. "Grows in the Burks, and other woods about Hx"—*Bolton*, Tab. 55. Still very common.
- P. panuoides**, Fr. Road-side, Hdc. 1893—*J.N.*
- Hygrophorus eburneus**, (Bull.) "Gathered amongst the grass under the elm trees near Stannary-lane, Sept., 1787"—*Bolton*, Tab. 4, f. 2. = *Ag. eburneus*. In pasture, Greetland—*Nat.*, Sept. 1892. Warley, 1893—*J.W.S.*
- H. pudorinus**, Fr. N. D. Wd.—*Nat.*, Sept. 1892. Heb. Bdg.—*J.N.*

- H. hypothejus**, Fr. Wood opposite Tippett-holme, 1893; Cr. Dn.—*J.N.* Hdc.—*H.T.S.*
- H. pratensis**, (Pers.) “Grows in dry and barren pasture about Hx.”—*Bolton*, Tab. 56. Form departing from the type—*Stev. Brit. Fungi*, II., p. 79. Frequent in pastures in autumn. Edible.  
Var. **cinereus**, Fr. Cr. Dn., 1893—*J.N.*!
- H. virgineus**, (Wulf.) Heb. Bdg.—*Nat.*, Sept. 1892. Norland, Ovenden, Lightcliffe, Lud. Dn., Fixby, and many other places. A choice edible species.
- H. niveus**, (Scop.) Common in pastures. Edible.
- H. Clarkii**, B. & Br. Fixby, Norland, Lud. Dn.!
- H. ovinus**, (Bull.) Cr. Dn., Lud. Dn., in pastures—*J.N.*!
- H. Colmannianus**, Blox. Hurst Wd. Wds., Cr. Dn., Lud. Dn., Hdc.—*J.N.*!
- H. lætus**, Fr. Heb. Bdg.—*Nat.*, Sept. 1892, several places. Norland, Lud. Dn., etc. In heathy pastures. Frequent.
- H. ceraceus**, Wulf. Hept., Cr. Dn., Hdc., Hurst—*J.N.* Ovenden, Lud. Dn. ! In pastures.
- H. coccineus**, (Schæff.) Fr. Mixenden—*Nat.*, Sept. 1892. Cr. Dn., Hurst—*J.N.* Lud. Dn., Elland, Norland ! In pastures.
- H. miniatus**, Fr. Heb. Bdg.—*Nat.*, Sept. 1892. Bn. Cl., Lud. Dn., Mixenden, Stainl., Southowram, etc. On moist heathy banks.
- H. puniceus**, Fr. Fixby, 1787—*Bolton*, Tab. 43. Hx.—*Id.* Tab. 67, f. 2. Common in heathy pastures and occasionally in woods.
- H. obrusseus**, Fr. “Grows on dry banks and in barren pastures about Hx., but rarely, 1788”—*Bolton*, Tab. 68. Heb. Bdg.—*J.N.* Lud. Dn. !
- H. intermedius**, Pass. Lightcliffe, 1892 !
- H. conicus**, (Scop.) Fr. Frequent in pastures.
- H. calyptriformis**, Berk. Abel Cote, Wds.—*J.N.* Edible.
- H. chlorophanus**, Fr. Acre, Hept., Cr. Dn., and other places about Heb. Bdg.—*J.N.* Lightcliffe, El. Pk., Lud. Dn. !
- H. psittacinus**, (Schæff.) Common in pastures.
- H. unguinosus**, Fr. Bn. Cl.—*Nat.*, Sept. 1892. Lud. Dn. ! Cr. Dn.—*J.N.*
- H. nitratus**, (Pers.) Pasture, Shaw Syke, 1899—*Nat.*, Sept. 1892. El. Pk. ! Cr. Dn., Hurst—*J.N.* Warley—*J.W.S.*

## LACTARIEÆ.

- Lactarius torminosus**, (Schæff.) "In wood called Elland Park, near Hx., Sept. 1794"—*Bolton*, unpublished Tab. 217, in Brit. Mus. (Nat. Hist.) Collection, No. 1247. El. Pk. Wd.! Cr. Dn., Mdgh., Pck. Wd.—*J.N.*
- L. turpis**, (Weinm.) Frequent in mixed woods.
- L. pubescens**, Fr. Cr. Dn., Mdgh., Pck. Wd.—*J.N.*
- L. insulsus**, Fr. Lud. Dn.—*Nat.*, Sept. 1892.
- L. blennius**, Fr. Bn. Cl., Heb. Bdg.—*Nat.*, Sept. 1892. H. Gr., Cr. Dn.—*J.N.* Ovenden, N. D. Wd., etc.!
- L. hysginus**, Fr. Cr. Dn., 1894—*J.N.* Rare.
- L. trivialis**, Fr. Ovenden—*Nat.*, Sept. 1892. Fixby—*U.B.* H. Gr., Hdc.—*J.N.* Stainl.!
- L. flexuosus**, Fr. H. Gr.—*H.T.S.*, *J.N.*
- L. pyrogalus**, (Bull.) Pck. Wd.—*J.N.* Lud. Dn.—*J.T.A.*
- L. squalidus**, Kromb. Ovenden—*Nat.*, Dec. 1890. *Cooke's Illustrations Brit. Fungi*, pl. 1004A.
- L. chrysorrheus**, Fr. "Grows in Woodhouse Wood, but sparingly, 1790"—*Bolton*, Tab. 144. Pck. Wd.—*J.N.*
- L. acris**, (Bolton) "Woodhouse Wood, 1788"—*Bolton*, Tab. 60.
- L. glaucescens**, Crossl. On the ground, Wade Wood, Lud. Dn., 1899—*J.N.* First record—*Nat.*, Jan. 1900, figs. 1-3. N. D. Wd., 1900!
- L. piperatus**, (Scop.) "Grows in woods about Hx"—*Bolton*, Tab. 21. Pck. Wd., Cr. Dn., Ca. Wd.—*J.N.*
- L. vellereus**, Fr. Hdc., 1892—*J.N.* N. D. Wd., 1900!
- L. quietus**, Fr. Very common in all our woods.
- L. theiogalus**, (Bull.) "In Ramsden, and many other woods about Hx."—*Bolton*, Tab. 9. Pck. Wd., 1893—*J.N.*
- L. cremor**, Fr. Var. **pauper**, Karst. Heb. Bdg., 1892—*J.N.*
- L. rufus**, (Scop.) N. D. Wd.—*Nat.*, Sept. 1892. Heb. Bdg., H. Gr.—*J.N.* Bn. Cl., Lud. Dn., etc.!
- L. helvius**, Fr. Cr. Dn., 1892—*J.N.*
- L. tomentosus**, Otto. Mdgh, 1899—*J.N.*
- L. glyciosmus**, Fr. Frequent in dryish woods!
- L. volemus**, Fr. Field near Sun Wd., 1892; Lud. Dn.! Pck. Wd.—*J.N.* [N. D. Wd.!
- L. serifluus**, (DC.) H. Gr., 1892. Hdc.—*J.N.* Lud. Dn.
- L. mitissimus**, Fr. Birks Hall—*Nat.*, Sept. 1892. H. Gr., Pck. Wd., Hept., Hdc.—*J.N.* Lud. Dn., El. Pk. Wd.!
- L. subdulcis**, (Bull.) "Grows in woods about Hx. abundantly, from Aug. to Nov."—*Bolton*, Tab. 3. Still common.

- L. camphoratus**, Fr. Rough Hey Wd.—*Nat.*, Jan. 1900!  
Wade Wd., Lud. Dn.—*J.W.S.* N. D. Wd., Pck.  
Wd., H. Gr.—*J.N.*
- L. subumbonatus**, Lindgr. Heb. Bdg., Cr. Dn.—*J.N.* Wade  
Wd., Lud. Dn., N. D. Wd.!
- L. minimus**, W.G.S. Heb. Bdg.—*Nat.*, Sept. 1892. Pck.  
Wd., H. Gr.—*J.N.* Wade Wd., Lud. Dn.!
- L. obliquus**, Fr. Sun Wd. 1892!
- Russula nigricans**, (Bull.) “In the dry parts of woods about  
Hx. in October”—*Bolton*, Tab. 28. Still common in  
the woods of the various deans.
- R. adusta**, Pers. Mdgh., Hdc.—*J.N.* N. D. Wd., Lud. Dn.!
- R. densifolia**, Secr. Wade Wd., Lud. Dn.—*J.T.A.*
- R. olivascens**, Fr. Spa Wd., Lud. Dn. H. Gr., Lee—*J.N.*
- R. furcata**, Pers. H. Gr., Mdgh., Cr. Dn., Broadbottom,  
Wds.—*J.N.* El. Pk. Wd., Lud. Dn., Bn. Cl.!
- R. sanguinea**, (Bull.) Lud. Dn.—*Nat.*, Sept. 1892!
- R. sardonica**, Fr. Heb. Bdg., 1895—*J.N.*!
- R. depallens**, Fr. N. D. Wd.—*Nat.*, Nov. 1891. H. Gr.,  
Cr. Dn., Hdc.—*J.N.* Lud. Dn.!
- R. cærulea**, Pers. Cr. Dn., 1894—*J.N.*
- R. drimeia**, Cke. Cr. Dn., 1897—*J.N.*
- R. lactea**, Pers. Mdgh. Wd., 1897—*J.N.*  
Var. **incarnata**, Quel. N. D. Wd., 1892—*H.T.S.*!
- R. virescens**, Schæff. H. Gr., N. D. Wd., Lud. Dn.—*J.N.*!
- R. cutefracta**, Cke. N. D. Wd. H. Gr.—*J.N.* In shrub-  
bery, Bermerside, Skircoat, 1902—*H. Lawson.*
- R. lepida**, Fr. Sun Wd., 1892, Lud. Dn. N. D. Wd.,  
Fries' var., 1903—*J.W.S.*!
- R. rubra**, DC. Ovenden—*Nat.*, Nov. 1891. N. D. Wd.—  
*Nat.*, Sept. 1892. Pck. Wd., Cr. Dn., Hdc., H. Gr.—  
*J.N.* Rough Hey Wd., Lud. Dn.!
- R. vesca**, Fr. Frequent in many woods. [*J.W.S.*
- R. lilacea**, Quel. Rough Hey Wd., N. D. Wd. Lud. Dn.—
- R. cyanoxantha**, Schæff. “Grows in all the woods about  
Hx. in plenty, from Aug. to Nov.”—*Bolton*, Tab. 1.  
Still common in all the wooded cloughs.
- R. heterophylla**, Fr. N. D. Wd., Heb. Bdg.—*Nat.*, Sept.  
1892. Lud. Dn.—*J.W.S.*! Stainland, 1899!
- R. consobrina**, Fr. Heb. Bdg.—*J.N.*  
Var. **sororia**, Larb. Pck. Wd., H. Gr.—*J.N.*!
- R. foetens**, Pers. H. Gr.—*J.N.* [Wd.!
- R. fellea**, Fr. H. Gr.—*J.N.* Fixby—*U.B.* Lud. Dn., N. D.

- R. emetica**, Fr. Common in all the moist woods.
- R. ochroleuca**, Pers. The commonest of the genus here.
- R. granulosa**, Cke. Heb. Bdg., Lee Hept.—*J.N.* N. D. Wd.—*Nat.*, Sept. 1892. Rough Hey Wd., Lud. Dn.,
- R. fragilis**, Pers. Common in all the moist woods. [etc. !  
 Var. **nivea**, Fr. Broadbottom, Wds.—*J.N.*  
 Var. **violacea**, Fr. Hdc., Cr. Dn.—*J.N.* ! N. D. Wd. !
- R. citrina**, Gillett. Mdgh. Wd., 1898—*J.N.*
- R. veteriosa**, Fr. H. Gr., 1899—*J.N.*
- R. integra**, (L.) Greetland, Elland, Heb. Bdg.—*Nat.*, Sept. 1892. Sun Wd., Ca. Wd., El. Pk. Wd., N. D. Wd.—*J.N.* ! Cr. Va.—*H.T.S.*
- R. decolorans**, Fr. Pck. Wd.—*J.N.*
- R. aurata**, (With.) N. D. Wd. !
- R. puellaris**, Fr. El. Pk. Wd.—*J. T. Jolley.*
- R. allutacea**, Fr. El. Pk. Wd.—*Nat.*, Sept. 1892. Cr. Dn., H. Gr.—*J.N.*
- R. ochracea**, A. & S. Lud. Dn., Cr. Va.—*J.T.A.* Mdgh. Wd.—*J.N.* N. D. Wd., etc. !
- R. lutea**, (Huds.) Pck. Wd., H. Gr., Lee Hept., Cr. Dn.—*J.N.* Lud. Dn.—*H.T.S.*
- R. nauseosa**, Pers. Mdgh. Wd., H. Gr., 1899—*J.N.*

## CANTHARELLEÆ.

- Cantharellus cibarius**, Fr. Hx.—*Bolton*, Tab. 62. Heb. Bdg.—*Nat.*, Nov. 1891. Hdc., H. Gr., Cr. Dn.—*J.N.* ! Rough Hey Wd.—*U.B.* ! Lud. Dn.—*H. Waterworth.* Generally on bare soil under beeches. Edible. A pale form has been met with in Cragg Vale (Aug. 1900) with gills less wrinkled and less decurrent than is usual with the type.  
 Var. **rufipes**, Gillett. H. Gr., 1893—*J.N.*
- C. aurantiacus**, Wulf. Not uncommon on moist shaded banks. Smaller than *cibarius*. Poisonous.
- C. tubæformis**, Fr. H. Gr., Hdc., Mdgh. Wd.—*J.N.* !
- C. infundibuliformis**, Fr. Heb. Bdg.—*Nat.*, Sept. 1892. H. Gr., Cr. Dn.—*J.N.* Lud. Dn.—*J.T.A.* ! In woods.
- C. cinereus**, (Pers.) Fr. "This Agaric I found in Lee Bank, Shroggs, in Oct. 1786; it has been brought me from several other places, by my friends"—*Bolton*, Tab. 34.
- C. lobatus**, Fr. On moss, Hx.—*Bolton*, Tab. 177.
- Nyctalis parasitica**, Bull. "Grows in Woodhouse Wood, but is rare there, 1790"—*Bolton*, Tab. 155. Parasitic on species of *Russula*.



## MARASMIÆ.

- Marasmius peronatus**, (Bolton). "A rare species here; grows in the deep and moist parts of woods, amongst the fallen oak leaves. The specimens.....grew in a little wood, called Trough of Bolland, in Northowram, near Halifax, Sept. 10th, 1787"—*Bolton*, Tab. 58. Pck. Wd., H. Gr., Cr. Dn.—*J.N.* Lud. Dn., N. D. Wd.—*U.B.* Stainl., etc.! Not uncommon at present among dead oak-leaves in woods.
- M. oreades**, (Bolton) Fr. *Bolton*, Tab. 151. Fairy-ring mushroom. Edible. Common; most frequently found in 'fairy-rings.'
- M. praiosmus**, Fr. On beech leaf-mould, Mdgh., Heb. Bdg.—*Nat.*, Sept. 1892.
- M. candidus**, (Bolton). "Grows in Woodhouse Wood, but is rare there"—*Bolton*, Tab. 39, f. D. "The figure in the Tab. above referred to [39 D] being taken from poor and mean specimens, and the plant a rare one, I thought it could not be amiss to add another figure as on Tab. 206, which is taken from well-grown specimens as I gathered them on rotten stems.....in Elland Park [Wood].....Sept. 1792"—*Bolton*, unpublished Tab. 206, Brit. Mus. (Nat. Hist.) Collection, No. 1414.
- M. ramealis**, (Bull.) Fr. Not uncommon on dead twigs in moist woods. H. Gr., Hdc., Elland Hall Wd., etc.—*J.N.*!
- M. rotula**, (Scop.) Fr. Cr. Dn., H. Gr.—*J.N.* El. Pk. Wd.!
- M. graminum**, Lib. Elland Hall Wd., 1898—*H.T.S.*
- M. androsaceus**, (L.) Fr. "Grows on putrid leaves, chiefly those of oak in the shady, moist parts of woods about Halifax; it also grows on moors, among rushes. I saw it in great abundance in Sept. this year, 1787, on the hill above Causey Foot.....; it grew upon the stalks of decayed rushes, in the place where the *Trientalis europæa* and the *Ophrys cordata* grow"—*Bolton*, Tab. 32. Still common on dead leaves and decaying herbaceous stems.
- M. saccharinus**, Fr. N. D. Wd.!
- M. epiphyllus**, Fr. *Bolton*, Tab. 39A.
- Lentinus tigrinus**, (Bull.) "In a wood in Southowram and sent to me in a half dried state and wanting the root.... I make no doubt of its being the *Agaricus tigrinus* of



- authors"—*Bolton*, unpublished Tab. in Brit. Mus. (Nat. Hist.) Collection, No. 1432.
- L. lepideus**, Fr. On old wooden bridge, Sowerby Bridge—*Huddersfield Bot. Soc.*, 1883.
- Var. **contiguus**, Fr. Ovenden—*Nat.*, Dec. 1890.
- L. squamosus**, Schulz. On woodwork in garden, Heath, 1903—*U.B.* First British record.
- L. cochleatus**, Fr. "Brackenbed, Ovenden, Sept. 1787"—*Bolton*, Tab. 8. On stumps, Ovenden—*Nat.*, Nov. 1891. H. Gr.—*J.N.* Woodhouse Wd., 1894—*J.W.S.* N. D. Wd.!
- L. flabelliformis**, (*Bolton*). "On the side of an old tree, beside the brook below Mixenden Mill, Feb. 1790"—*Bolton*, Tab. 157.
- Panus conchatus**, Fr. Foster Mill Lane, Heb. Bdg.—*J.N.*
- P. torulosus**, Fr. "On stumps of trees, Northowram, Aug. 1791"—*Bolton*, Tab. 146. On stumps, Rough Hey Wood, 1900!
- P. stypticus**, (*Bull.*) Fr. "On putrid wood, Woodhouse Wood, etc."—*Bolton*, Tab. 72, f. 1. Shelf Woods—*Nat.*, Sept. 1891. On decaying oak, Cr. Dn.—*Nat.*, Sept. 1892.

## LENZITEÆ.

- Lenzites flaccida**, (*Bull.*) "Grew on old pales near Shibden Hall, Jan. 1791"—*Bolton*, Tab. 158.

## SCHIZOPHYLLÆ.

- Schizophyllum commune**, Fr. On sycamore trunk, Weting, Cr. Dn., 1894—*J.N.* Very rare.

## POLYPORACEÆ.

## BOLETEÆ.

- Boletus flavus**, With. "This plant grew in plenty in the wood opposite Burks Hall, in Aug. 1760"—*Bolton*, Tab. 169. Cr. Dn., 1893, Mdgh. Wd., H. Gr.—*J.N.*
- B. chrysenteron**, Fr. Common in almost all our woods.
- Var. **nanus**, Mass. Heb. Bdg., 1893—*J.N.*
- B. striæpes**, Secr. Lud. Dn.—*Nat.*, Sept. 1891.
- B. subtomentosus**, L. Hx.—*Bolton*, Tab. 84, middle figure. N. D. Wd.—*Nat.*, Oct. 1877. Common in all the woods.
- B. sulphureus**, Fr. On stump, Bogden, 1901. [*J.N.*]
- B. varicolor**, B. & Br. Cr. Dn.—*Nat.*, Sept. 1892. Hdc.—
- B. olivaceus**, Schæff. Lillands Wood, Rastrick—*Huddersfield Bot. Soc.*, 1883.

- B. cyanescens**, Bull. Cr. Dn., 1896; Mdgh., 1897—*J.N.*
- B. badius**, L. Common in all the woods.
- B. piperatus**, Bull. Hdc., 1893—*J.N.* Hollock Lee—*Bot. Soc.*
- B. bovinus**, L. Hx. 1775—*Bolton*, Cat. No. 461. H. Gr., 1893—*J.N.*
- B. aurantiporus**, Howse. Broadbottom, Wds.—*J.N.*
- B. edulis**, Bull. "Near Burks Hall"—*Bolton*, unpublished Tab., Brit. Mus. (Nat. Hist.) Collection, No. 1490. Lud. Dn.—*Nat.*, Sept. 1892. H. Gr., Mdgh. Wd., Cr. Dn., Hdc.—*J.N.*! Norland—*U.B.* Hollock Lee—*Bot. Sec.* Edible.
- B. luridus**, Schæff. Hx., 1788—*Bolton*, Tab. 85. In similar localities to *edulis*. Records many.  
Var. **erythropus**, Fr. Lud. Dn.—*Nat.*, Sept. 1892.
- B. rubinus**, W. G. Sm. In field, Lee, Hept., 1897—*J.N.*
- B. felleus**, Bull. Ovenden—*Nat.*, Sept. 1892. H. Gr., Pck. Wd., Hdc., Mdgh. Wd., Cr. Dn.—*J.N.* Lud. Dn.!
- B. scaber**, Fr. Many places about Heb. Bdg.—*J.N.* Lud.
- B. alutarius**, Fr. Hdc.—*Nat.*, June 1894. [Dn.!
- B. porphyrosporus**, Fr. "Woodhouse Wood, 1788"—*Bolton*, Tab. 86. H. Gr.—*Nat.*, June 1894. Hdc., Cr. Dn., Nut Cl.—*J.N.* Bn. Cl., N. D. Wd., Sun Wd., Ca. Wd., etc.!
- Strobilomyces strobilaceus**, Berk. Strangstry Wood, Rastrick—*Nat.*, Dec. 1891. Pck. Wd.—*J.N.* N. D. Wd.—*Nat.*, June 1894. A somewhat rare fungus.
- Fistulina hepatica**, (Huds.) Bull. "In hollow cavity in the stock of a living oak tree, in the Shroggs, in Ovenden, Oct. 17, 1785"—*Bolton*, Tab. 79. N. D. Wd.—*Nat.*, Sept. 1892. Lud. Dn.! Shackleton Hill, Hdc., H. Gr., etc.—*J.N.* Parasitic on aged oaks. Edible.

## POLYPOREÆ.

- Polyporus fuscidulus**, Fr. "In North Dean, near Hx., a rare species, 1790"—*Bolton*, Tab. 170.
- P. squamosus**, (Huds.) Fr. "On ash tree, Skircoat, July 1787"—*Bolton*, Tab. 77. Ovenden—*Nat.*, Nov. 1891. Frequent on trunks, stumps, etc. Records many.
- P. Rostkovii**, Fr. On stump, N. D. Wd.—*Nat.*, June 1894. El. Pk. Wd., 1898—*H.T.S.*
- P. varius**, Fr. "On stump of an elder tree, near Shibden Hall"—*Bolton*, Tab. 168.

- P. elegans**, Fr. "On the stump of a fallen willow tree below Woodhouse, near the river Calder, Aug. 1787"—*Bolton*, Tab. 83.
- P. giganteus**, Fr. "Among the decaying fragments of a decayed elm root is Cross Field, Aug. 1786"—*Bolton*, Tab. 76. On stump, Heath, 1894—*U.B.* Broad-bottom, Wds.; Heb. Bdg., on beech stump—*J.N.* Hollin Hey, Stainl., etc.!
- P. sulphureus**, Fr. "Most commonly on living wood, in some cavity occasioned by the lopping of a branch, or some other accident.....Grew in a little wood at Shibden Hall, Aug. 1786"—*Bolton*, Tab. 75. On stump, Hollins, Warley—*Nat.*, Sept. 1892. Pck. Wd., Hdc.—*J.N.*
- P. heteroclitus**, (Bolton) Fr. "Under oak trees, near Fixby Hall"—*Bolton*, Tab. 164.
- P. salignus**, Fr. "On the root of a fallen poplar, at Copley Hall, 1788"—*Bolton*, Tab. 78.
- P. hispidus**, Fr. On living ash tree, Park Nook, 1893!
- P. betulinus**, (Bull.) Fr. "On birch trees in Shackleton Wood, near Heptonstall, 1791"—*Bolton*, Tab. 159. Cr. Dn., Pck. Wd., Ca. Wd.—*J.N.* N. D. Wd., Lud. Dn., Stainl., Turner Wd. ! On birches.
- P. fumosus**, Fr. N. D. Wd.—*Nat.*, Sept. 1892. Hdc., Mdgh. Wd., etc.—*J.N.* [1892.]
- P. adustus**, Fr. Fixby—*A. Clarke!* Ovenden—*Nat.*, Sept.
- P. chioneus**, Fr. Hdc.—*J.N.*
- P. adiposus**, B. & Br. Ovenden—*Nat.*, Sept. 1892.
- Polystictus perennis**, Fr. "Robin Hood's Scar, Southowram, Sept. 1784"—*Bolton*, Tab. 87. Pck. Wd., Hdc.—*J.N.* Lud. Dn., 1898!
- P. cinnamomeus**, (Jacq.) Lud. Dn., 1900—*H. Waterworth.*
- P. versicolor**, (Huds.) "In woods about Hx., plentifully"—*Bolton*, Tab. 81. Common on tree trunks, stumps, gate-posts, etc.
- P. radiatus**, (Sow.) Fr. Heb. Bdg.—*Nat.*, Sept. 1892.
- P. hirsutus**, Fr. On trunk, Ashday. On wood, Dean Clough Dye Works—*Nat.*, June 1894.
- P. velutinus**, Fr. On root, Hdc., 1892—*J.N.*
- P. abietinus**, Fr. On fir wood, Heb. Bdg.—*Nat.*, Sept. 1892.
- Fomes fomentarius**, Fr. Heb. Bdg.—*J.N.!*
- F. igniarius**, (Huds.) Hx. 1775—*Bolton*, Cat. No. 460. "On the stock of a cherry tree, Southowram, 1788"—*Bolton*

Tab. 80, also unpublished Tab. 203, Brit. Mus. (Nat. Hist.) Collection No. 1580. Brookhouse, Ovenden, 1891! On ash. [J.N.]

**F. annosus**, Fr. Lud. Dn.—*Nat.*, Sept. 1892. H. Gr., etc.—

**F. resupinatus**, (Bolton) Mass. “On dry decayed hasle boughs near Burks Hall, 1790”—*Bolton*, Tab. 165; *Mass. Brit. Fung. Fl.*, I. p. 226. Pck. Wd., 1891—J.N.

**Poria vaporaria**, Fr. Common on decaying branches etc., in moist woods. Records many.

**P. vulgaris**, Fr. Hx., 1790—*Bolton*, Tab. 166, a. b.

**P. medulla-panis**, (Pers.) Fr. Hx., 1790—*Bolton*, Tabs. 166, c. d., 167, f. 2. Hurst Wds., 1897—J.N.

**P. blepharistoma**, B. & Br. On leaf mould, Pck. Wd.—*Nat.*, Sept. 1892. N. D. Wd., 1898—*H.T.S.*! [H.T.S.!

**P. Vaillantii**, Fr. Among dead leaves, El. Pk. Wd., 1894—

**P. terrestris**, Fr. Bn. Cl. 1898—*H.T.S.*

**P. sanguinolenta**, (A. & S.) Bn. Cl.—*Nat.*, Nov. 1891. Heb. Bdg.—*Nat.*, Sept. 1892; near Sterne Mill, 1896. Alcomden Clough, 1898—*H.T.S.*

**P. micans**, Fr. H. Gr.—*Nat.*, June 1894. N. D. Wd.!

**Trametes odora**, Fr. “Near Shibden Hall on old willow tree, 1791. When dried it has a smell like aniseeds”—*Bolton*, Tab. 162.

**T. inodora**, Fr. Lud. Dn., 1893—*Nat.*, June 1894.

**T. mollis**, Fr. El. Pk. Wd.—*Nat.*, Sept. 1892.

**Dædalea quercina**, (L.) Pers. Hx. 1788—*Bolton*, Tab. 73. Hollin Hall, Cr. Dn., 1894—J.N. On oak stump.

**D. confragosa**, Pers. “On old trees near Fixby Hall, 1790”—*Bolton*, Tab. 160.

**D. unicolor**, (Bull.) Fr. Hx. 1791—*Bolton*, Tab. 163. Ovenden, 1892. On gate post, El. Pk. Wd., 1894—*H.T.S.*! Heb. Bdg.—J.N.

**Merulius lacrymans**, Fr. Dry-rot. Only too common on wood, etc., in buildings in damp, close places. Has often been seen in such situations in Hx. Very destructive to woodwork.

**M. serpens**, Tode. El. Pk. Wd.—*Nat.*, June 1894.

**M. tremellosus**, Schrad. On fallen ash branches, El. Pk. Wd.!

**M. corium**, Fr. N. D. Wd.—*W. West, Lees' Fl.*

**Solenia anomala**, Fr.

Var. **ochracea**, (Hoff.) Mass. El. Pk. Wd., 1898—*H.T.S.*!

## HYDNEÆ.

- Hydnum repandum**, L. "In a deep narrow lane, North Dean [Wood], 1786"—*Bolton*, Tab. 88, Cat. No. 443. Heb. Bdg.—*Nat.*, Nov. 1891. H. Gr., Cr. Dn.—*J.N.* Elland & Stainl., several places—*M. Buckley*. Lud. Dn.!
- Var. **rufescens**, Pers. "In great abundance in Lee Bank, Shroggs, Sept. 1786"—*Bolton*, Tab. 89. H. Gr.—*Nat.*, June 1894.
- H. fuligineo-album**, Schmidt. In a woodside pasture, Cr. Dn.; first British record—*Nat.*, Dec. 1892.
- H. auriscalpium**, L. "Under fir trees in plantations about Hx., in Sept. and Oct."—*Bolton*, Tab. 90, on fir cones.
- H. ochraceum**, Pers. On old log, Holmfield, 1898—*H.T.S.*
- H. squalinum**, Fr. Hx., 1788—*Bolton*, Tab. 74.
- H. viride**, Fr. Gibson Wd., Hdc.—*Nat.*, June 1894.
- H. Stevensoni**, B. & Br. On decaying wood in stackgarth, Binnroyd, 1898—*H.T.S.*!
- H. farinaceum**, Pers. Hdc., 1892—*J.N.* Ashday!
- Caldesiella ferruginosa**, (Fr.) Sacc. N. D. Wd.!
- Irpex obliquus**, Fr. Hx.—*Bolton*, Tab. 167, f. 1.
- I. deformis**, Fr. On dead wood, Cr. Va.—*Nat.*, June 1894.
- Radulum epileucum**, B. & Br. N. D. Wd.—*Nat.*, June 1894.
- Phlebia merismoides**, Fr. On fallen trunk, N. D. Wd., Tag Lock, 1894—*H.T.S.*
- P. contorta**, Fr. Shibden—*Nat.*, Dec. 1890. Hdc.—*J.N.*
- P. vaga**, Fr. On timber in damp cellar, Hx., 1902—*J. Egerton*. Cr. Dn.!

## CLAVARIACEÆ.

- Clavaria fastigiata**, L. *Bolton's* fig. 2, Tab. 112, under this name is doubtful. Sun Wd., Ogden! H. Gr., Cr. Dn.—*J.N.* Lud. Dn.—*J.W.S.*
- C. muscoides**, L. "Common in cold dry pasture ground about Hx."—*Bolton*, Tab. 114, Cat. No. 447. Pasture near Pck. Wd.—*Nat.*, Sept. 1892. Hurst—*J.N.* Lud. Dn.!
- C. cinerea**, Bull. Pck. Wd.—*Nat.*, Sept. 1892. H. Gr., in several woods in Cr. Dn.—*J.N.*! Ovenden, 1891.
- C. cristata**, Holmsk. El. Pk. Wd.—*Nat.*, Nov. 1891. Common in many of our moist woods on bare ground.
- C. rugosa**, Bull. "Grows in plenty under the fir trees about Fixby Hall in September"—*Bolton*, Tab. 115. Heb. Bdg.—*Nat.*, Nov. 1891. Pck. Wd.—*Nat.*, Sept. 1892.

- Lee, H. Gr., etc.—*J.N.* Among *Empetrum nigrum*, Jackson Ridge, Wds., 1902—*W. B. Crump*.
- C. aurea**, Schæff. “In several woods about Hx. in Oct.”—*Bolton*, Tab. 113.
- C. grisea**, Pers. Among dead oak-leaves, Winter Well, Cr. Dn.—*Nat.*, Dec. 1890. H. Gr.—*J.N.*
- C. rosea**, Fr. Pasture, Acre, Hept.—*Nat.*, June 1894.
- C. fusiformis**, Sow. Hx.—*Bolton*, Tab. 110. Fixby, field near El. Pk. Wd.! Abel Cote, Hurst fields, and Winter Well—*J.N.* Lud. Dn.!
- C. dissipabilis**, Britz. Hdc., 1893—*Grev.* XXII., p. 42. First British record. Previously confused with *C. fragilis*. Cr. Dn.—*J.N.* Lud. Dn., 1895!
- C. inæqualis**, Fl. Dan. Common in grassy woods, and in pastures. Records many.
- C. argillacea**, Fr. On stiff soil, N. D. Wd.—*Nat.*, Sept. 1892. Sun Wd.—*H.T.S.* H! Gr.—*J.N.*
- C. vermicularis**, Scop. Not uncommon in moist pastures.
- C. fragilis**, Holmsk. “In Mrs. Caygill’s garden at Sha, abundant, Oct. 1786”—*Bolton*, Tab. 111, f. 1. Broad-bottom, Cr. Dn. and H. Gr.—*J.N.*
- C. fumosa**, Pers. In dense tufts in pasture, Stainl.!
- C. acuta**, Sow. On soil in plant pots, Bermerside, Skircoat, 1892—*H. Lawson*.
- Typhula erythropus**, Fr. “In a moist place near Lee Beck, half a mile from Hx., Oct. 1788”—*Bolton*, Tab. 112, f. 1. Common in moist shady places on decaying leaves, herbaceous stems, etc. [*H.T.S.*]
- T. phacorrhiza**, Fr. Among dead leaves, El. Pk. Wd.—
- T. gyrans**, Fr. Cr. Dn., 1892—*J.N.* Bn. Cl.—*H.T.S.*!
- T. pusilla**, Schrœt. On decaying leaves of wych-elm, El. Pk. Wd.! and of alder, Tag Lock, 1894—*H.T.S.*!
- Pistillaria quisquiliaris**, Fr. On wet dead oak-leaves, Lud. Dn., 1892—*H.T.S.*! Sun Wd.!
- P. puberula**, Berk. On wet dead leaves of sycamore, wych-elm, etc. Pck. Wd., etc.—*J.N.* El. Pk. Wd., Lud. Dn., N. D. Wd., Sun Wd., etc.!

## THELEPHORACEÆ.

- Craterellus lutescens**, Fr. “Ramsden Wood, Oct. 1786, rare”—*Bolton*, Tab. 105, f. 2.
- C. cornucopioides**, (Schæff.) “In the shady parts of woods, in the Shroggs, North Dean, etc., Hx., 1788”—*Bolton*, Tab. 103.

- Stereum hirsutum**, Fr. *Bolton*, Tab. 82, figs. a. b. c. Very common on fallen trunks and dead branches.
- S. ochroleucum**, Fr. On sycamore, Cr. Dn. and Hdc.—*J.N.*
- S. purpureum**, Pers. Heb. Bdg., etc.—*Nat.*, Sept. 1892. Ovenden, N. D. Wd.; on dead sycamore, El. Pk. Wd., Lud. Dn., Cwl. Wd., Coley, etc.! Mdgh., etc.—*J.N.* On living laburnum, Heath, 1901—*W. B. Crump.*
- S. sanguinolentum**, Fr. Heb. Bdg., Cr. Dn., Hdc.—*J.N.* Coley, N. D. Wd.!
- S. rugosum**, Fr. Heb. Bdg.—*Nat.*, Nov. 1891. Cr. Dn.—*J.N.* Ramsden Wood, 1890—*J.T.A.*
- S. spadiceum**, Fr. H. Gr., 1893—*J.N.*
- S. vorticosum**, Fr. *Bolton*, Tab. 82, figs. d. e. (?)
- Corticium calceum**, Fr. On dead wood, El. Pk. Wd.—*Nat.*, June 1894. On decaying stump, N. D. Wd.!
- C. sebaceum**, (Berk.) Mass. On decaying wood, Alcomden Clough, Wds., 1898—*H.T.S.* [1894.]
- C. scutellare**, B. & C. On wood, El. Pk. Wd.—*Nat.*, June
- C. lacteum**, Fr. El. Pk. Wd., 1898—*H.T.S.*
- C. arachnoideum**, Berk. Lud. Dn.—*Nat.*, Nov. 1891.
- C. sambuci**, Fr. On elder trees, El. Pk. Wd.—*Nat.*, Sept. 1892.
- C. sanguineum**, Fr. N. D. Wd., Heb. Bdg.—*Nat.*, Sept. 1892.
- C. cæruleum**, Fr. (*Peziza cærulea*, *Bolton*). "On wood under the fir trees at Burks Hall, Oct. 1782."—*Bolton*, Tab. 108, f. 2.
- Hymenochæte tabacina**, Lév. On trunks, branches, etc., Iix., May 1790—*Bolton*, Tab. 174.
- Peniophora gigantea**, (Berk.) Mass. Hdc., 1893—*J.N.*
- P. Crosslandi**, Mass. Brit. Fung. Fl., I., p. 418. On pine bark and wood, Hdc., 1892—*Nat.*, June 1894. We took this for a small form of *P. gigantea*, but Mr. Massee says it is quite distinct. Pck. Wd., 1898, on pine root—*J.N.*
- P. incarnata**, (Cke.) Mass. On dead *Ulex*, Sk. Moor—*H.T.S.*
- P. ochracea**, (Fr.) Mass. Shibden, Feb. 1899—*H.T.S.* Heb. Bdge.—*J.N.*
- P. cinerea**, Cke. On bark, Cr. Dn., 1899—*J.N.*
- Cyphella Pimii**, Phil. Cr. Dn., El. Pk. Wd., H. Gr., Cat-holes Clough, etc.—*J.N.*! On dead stems of nettle, butter-bur, etc.
- C. capula**, Fr. Common on various decaying herb. stems.
- C. albo-violascens**, Karst. On dead ferns and twigs, Pck. Wd.—*J.N.*



- C. villosa**, Karst. On dead stems of butter-bur, El. Pk. Wd. !  
and on twigs, Lee Mill Road, Heb. Bdg.—*J.N.*
- Thelephora terrestris**, Ehrh. Heb. Bdg., 1892—*H.T.S.*; *J.N.*
- T. laciniata**, Pers. “In a little plantation near Lee Bridge,  
Feb. 1790”—*Bolton*, Tab. 173. Pck. Wd., H. Gr.,  
Cr. Dn., Lee, Hept.—*J.N.* N. D. Wd. !
- T. biennis**, Fr. N. D. Wd.—*J.T.A.*; *Nat.*, June 1894.
- Coniophora arida**, (Stev.) Karst. On soil in plant-pot, house  
porch, Clover Hill; on decaying wood, Bn. Cl.—*H.T.S.* !
- C. sulphurea**, (Berk.) Mass. On fallen trunk, Hdc., Pck.  
Wd.—*Nat.*, June 1894.
- C. membranacea**, DC. On wall, shop-cellar-window area,  
Hx., 1902-3 ! [1898 !
- C. puteana**, (Stev.) Mass. On bark and wood, Sun Wd.,
- Exobasidium vaccinium**, Woronin. On living leaves of  
*Vaccinium myrtillus*, Hippines Clough, 1901—*C. E. Moss.*

## TREMELLACEÆ.

- Auricularia mesenterica** F. Hx. “On surface of an ash-  
tree stump”—*Bolton*, Tab. 172.
- Hirneola auricula-judæ**, Berk. Jews'-ear. “On old elder  
and willow trees.....by Red Beck, near Shibden Hall,  
Feb 1789”—*Bolton*, Tab. 107. On branches of living  
elder tree, El. Pk. Wd.—*Nat.*, Sept. 1892.
- Ulocolla foliacea**, Bref. On pine stump, Hdc.—*Nat.*, Sept.  
1892. Pck. Wd., Cr. Dn.—*J.N.*
- Tremella fimbriata**, Pers. Ovenden and Heb. Bdg.—*Nat.*,  
Sept. 1892. On the cut surface of new stumps.
- T. lutescens**, Pers. Shibden Head—*Nat.*, Sept. 1892.
- T. tubercularia**, Berk. On fallen oak branch, H. Gr.—*Nat.*,  
June 1894.
- Næmatelia encephala**, Fr. On bark, Pck. Wd., 1892—*J.N.*
- Ditiola radicata**, Fr. On pine wood, Hdc.—*J.N.*
- Dacryomyces deliquescens**, Duby. Common on decorticated  
wood—*Nat.* Sept, 1892.
- D. stillatus**, Nees. Very common everywhere on decaying  
woodwork, as gate posts, palings, disused beams, etc.
- D. chrysocomus**, Fr. On dead wood, Mdgh., Hurst—*J.N.*  
El. Pk. Wd., N. D. Wd., etc. !
- Palocera viscosa**, Fr. Ovenden—*Nat.*, Nov. 1891. Ashday,  
etc.—*Nat.*, Sept. 1892. Fixby—*Huddersfield Bot. Soc.*

- Heb. Bdg., H. Gr., Cr. Dn.—*J.N.* N. D. Wd., Heath, etc. ! On pine and other stumps.
- C. cornea**, Fr. Heb. Bdg., Hdc., 1892—*J.N.* El. Pk. Wd., Wade Wd., Sun Wd. ! Turner Clough, 1897—*Bot. Sec.*
- C. stricta**, Fr. “On the stock of a fallen tree.....in damp place amongst tall weeds”—*Bolton*, unpublished Tab. 211. Brit. Mus. (Nat. Hist.) Collection, No. 1980.
- C. glossoides**, Fr. Lud. Dn.—*Nat.*, Nov. 1891. Heb. Bdg. and H. Gr.—*Nat.*, June 1894. El. Pk. Wd. On fallen trunks.

#### UREDINACEÆ.

- Melampsora farinosa**, (Pers.) On leaves of *Salix caprea*, every season, Mdgh. road—*J.N.*
- Poleosporium sonchi**, (Pers.) On *Petasites vulgaris* and *Tussilago farfara*. Not uncommon.
- P. euphrasiæ**, (Schum.) On *Euphrasia officinalis*, Lud. Dn.—*Hx. Nat.*, I., p. 28.
- P. miniatum**, Pers. On wild rose, Gibson Mill, Hdc., 1894—*H.T.S.* This particular rose blight has been stated to be *Phragmidium subcorticatum*, but years of watching has failed to discover *Phragmidium* teleutospores. Mr. Soppitt held that it belonged here.
- Uromyces polygoni**, (Pers.) On *Polygonum aviculare*, Skircoat, 1898—*H.T.S.* Lud. Dn. !
- U. trifolii**, (A. & S.) On *Trifolium repens*, Mdgh., 1892. Winter Well, Cr. Dn.—*J.N.* ! [ *J.N.*
- U. valerianæ**, (Schum.) On *Valeriana officinalis*, Cr. Dn.—
- U. poæ**, Rabh. Æcidiospores common on *Ranunculus Ficaria*; teleutospores on *Poa pratensis*. El. Pk. Wd., Cr. Dn., Pck. Wd.—*J.N.* Freeman Wd., etc. !
- U. rumicis**, (Schum.) On *Rumex Acetosa*, Pck. Wd.—*J.N.*
- U. alchemillæ**, (Pers.) On *Alchemilla vulgaris*. Common.
- U. ficaria**, (Schum.) On *Ranunculus Ficaria*. Common.
- U. scillarum**, (Grev.) On *Scilla nutans*. Rough Hey Wd.—*Bot. Sec.* Hdc.—*Geo. Park.* Cr. Dn., etc., etc.—*J.N.* ! El. Hall Wd.—*H.T.S.* Bn. Cl. ! Sun Wd.—*C. E. Moss.*
- Puccinia prenanthis**, (Pers.) On *Lactuca muralis* !
- P. lapsanæ**, (Schultz.) On *Lapsana communis*, El. Pk. Wd. ; on *Crepis paludosa*, Hdc., H. Gr., Cr. Dn.—*J.N.*
- P. variabilis**, (Grev.) On *Taraxacum officinalis*, Hdc.—*J.N.* Ogden—*Bot. Sec.*, *Hx. Nat.*, I., p. 98.

- P. pulverulenta**, Grev. On *Epilobium montanum*, Pck. Wd., Hdc.—*J.N.* On *E. hirsutum*, H. Gr.—*J.N.*!
- P. violæ**, (Schum.) On *Viola*, Strynes, Stansfield, 1893—*J.N.*!
- P. menthæ**, Pers. On garden mint, Lightcliffe; Heb. Bdg., etc. On *Mentha aquatica*, dam side, Gibson Mill, Hdc.—*J.N.*!
- P. poarum**, Niels. On *Tussilago Farfara* and *Poa pratensis*, H. Gr., Mdgh., Pck. Wd.—*J.N.* Rishworth!
- P. obscura**, Schröt. On *Bellis perennis* and *Luzula campestris*, Hurst, Wds.—*J.N.* Lud. Dn.—*H.T.S.*
- P. suaveolens**, (Pers.) On *Cnicus arvensis*, Hdc., 1892—*J.N.* Field near El. Pk. Wd.—*H.T.S.*
- P. hieracii**, (Schum.) Common here on *Cnicus arvensis* and *Hypochæris radicata*.
- P. centaureæ**, Mart. On *Centaurea nigra*, Hdc., H. Gr.—*J.N.*
- P. taraxaci**, Plow. On *Taraxacum officinalis*, Pck. Wd., H. Gr., 1893—*J.N.*!
- P. oblongata**, (Link.) On *Luzula campestris*, Brookhouse, Ovenden, 1892! H. Gr. On *L. pilosa*, Hdc., 1894—*H.T.S.*, *J.N.*
- P. Baryi**, (B. & Br.) On *Deschampsia cæspitosa*, Acre, Hep-tonstall, 1892—*H.T.S.*, *J.N.*
- P. bistortæ**, Str. *Æcidium* stage on *Conopodium denudatum* and teleutospores on *Polygonum Bistorta*. First discovered in this country by Messrs. Needham and Pickles at Hardcastle, 1892. In 1892-3 Mr. Soppitt established by experimental cultures the connection of the above two stages in the life history of this fungus, (see *Grev.* xxii., pp. 45-47). Since that time it has been found in scores of places throughout the parish, where the two host plants grow in company. At present there are few beds of sweet-dock free from it.
- P. anthoxanthi**, Fckl. On *Anthoxanthum odoratum*, Mdgh., 1894—*J.N.*
- P. betonicæ**, (A. & S.) On *Stachys betonica*, Lud. Dn., 1892—*J. Binns.* Coley, 1892—*J. H. Bolton!* Wheatley, 1895—*C. E. Moss.*
- P. campanulæ**, Carm. On *Campanula rotundifolia*, Hurst, Wds., 1894—*J.N.*
- P. epilobii**, DC. On *Epilobium obscurum*, canal side, El. Pk. Wd.! Hippings Clough; Mdgh.—*J.N.* Coley and Wheatley—*C. E. Moss.* Ogden—*A. Bullock.*
- P. fusca**, (Relhan.) On *Anemone nemorosa*. Common.

- P. bunii**, (DC.) On *Conopodium denudatum*. Common.
- P. senecionis**, Lib. On *Senecio aquaticus*, Acre, Hept.; Cr. Dn.—*J.N.* Coley—*C. E. Moss.* Field near Sun Wd.!
- P. glomerata**, Grev. On *Senecio Jacobæa*, Ovenden! Hept., Cr. Dn.—*J.N.*
- P. veronicæ**, (Schum.) On *Veronica montana*, H. Gr.—*J.N.*
- P. valantiæ**, Pers. On *Galium saxatile*, Pck. Wd.—*H.T.S.* H. Gr.—*J.N.*!
- P. Pringsheimiana**, Kleb. Artificially produced on *Carex vulgaris* (planted in Mr. Soppitt's garden, Clover Hill), by inoculation with spores of *Æcidium grossulariæ* taken from wild gooseberry shrub, *Ribes grossularia*, growing near Ferry, Windermere, May 1898. The life cycle was completed by the successful inoculation of an adjoining gooseberry tree by the spores from the *Carex*.
- Xenodochnus carbonarius**, Schlecht. On *Sanguisorba officinalis*, Lumb Fall, Cr. Dn., 1892—*J.N.*
- Cæoma mercurialis**, (Pers.) On *Mercurialis perennis*, H. Gr., Hdc.—*Hx. Nat.*, III., p. 128.

#### USTILAGINACEÆ.

- Ustilago longissima**, (Sow.) On *Glyceria aquatica*. Canal side, Copley, 1891—*H.T.S.* Elland! Eastwood—*J.N.*
- U. segetum**, (Bull.) On oats, Heb. Bdg., 1893—*J.N.*
- U. bromivora**, Waldh. On *Bromus mollis*, Lightcliffe, 1893!
- U. violacea**, (Pers.) Fckl. In the flowers of *Lychnis diurna*, El. Pk. Wd., Sun Wd.! Pck. Wd., H. Gr.—*J.N.*
- U. Kuhneana**, Wolff. On *Rumex acetosa*, Lightcliffe; Heb. Bdg.—*J.N.* Lud. Dn., Holmfield, etc.!
- U. tragopogi**, (Pers.) Schröt. On *Tragopogon pratensis*, Crow Nest, Lightcliffe—*J. H. Bolton, Nat.*, June 1894.
- Sphacelotheca hydropiperis**, (Schum.) In the ovary of *Polygonum hydropiper*, Salterhebble, 1892—*H.T.S.*!
- Tilletia striæformis**, (Westd.) On *Holcus lanatus*, Pck. Wd., 1892—*J.N.*, *H.T.S.* El. Pk. Wd.!
- Urocystis agropyri**, Schröt. On *Carex glauca*, H. Gr., Heb. Bdg., 1892—*J.N.*
- U. anemones**, (Pers.) Schröt. On *Ranunculus repens*, H. Gr., Pck. Wd. On *Anemone nemorosa*, Cr. Dn., 1892—*J.N.*

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**Schinzia alni**, Woronin. Constantly on alder roots.

**Tuberculina percicina**, (Ditm.) Sacc. Parasitic on *Æcidium* spots on *Tussilago Farfara*, Lud. Dn., 1898!

## ASCOMYCETES.

## ONYGENACEÆ.

- Onygena equina**, Pers. 1790. "Hx., on the putrid hoofs of beasts"—*Bolton*, Tab. 178.
- O. pilogena**, Fr. On old stocking, rubbish heap, Barkisland, 1894—*H.T.S.* On old felt hat and rotting cloth-tab hearthrug, Pck. Wd., 1897—*J.N.*!

## ELAPHOMYCETACEÆ.

- Elaphomyces granulatus**, Fr. A subterranean species. Pck. Wd., 1893—*J.N.* El. Pk. Wd., 1894!

## PYRENOMYCETES.

## PERISPORIACEÆ.

- Sphærotheca pannosa**, (Wallr.) Lév. Only too common on both wild and cultivated rose trees.
- S. castagnei**, Lév. On *Spiræa ulmaria*, H. Gr.—*H.T.S.*!
- Erysiphe polygoni**, DC. (*E. Martii*, Lév.) On *Heracleum sphondylium*, *Anthriscus sylvestris*, etc. Common.
- E. graminis**, DC. On grass stems, Elland! Mdgh.—*J.N.*
- Eurotium herbariorum**, Link. On old boot, Park Nook, and on *Rubus* spp. in *Herb. C.C.* The ascigerous condition of *Aspergillus glaucus*. [*bariorum.*]
- [**E. epixylon**, Link. Ovenden—*Nat.*, Sept. 1892, is *E. herbariorum*.]
- Anixia cyclospora**, (Cke.) Sacc. (*Orbicula cyclospora*, Cke.) On wet, rotting newspaper, railway bank, Tag Lock! and on stems in continental bale of herbs, warehouse, Hx.—*H.T.S.*
- A. spadicea**, Fckl. On rotting cloth hearth-rug, Pck. Wd.—*J.N.* Quite distinct from *A. cyclospora*.
- Thielavia Soppittii**, Crossl. On decaying stems of *Cnicus palustris*, Bn. Cl.—*Nat.*, Jan. 1900, figs. 4-6; *Hx. Nat.*, IV., p. 114.
- Perisporium vulgare**, Corda. On rotting cloth hearth-rug, Pck. Wd., 1897—*J.N.*!

## SPHÆRIACEÆ.

- Sphærella maculæformis**, (Pers.) On fallen oak leaves, Cr. Dn.!
- S. rumicis**, (Desm.) Common on living leaves of *Rumex* spp.
- S. hederæ**, (Sow.) On dead ivy leaves, Cr. Dn.!
- Stigmatea Robertiana**, Fr. On green leaves of *Geranium Robertianum*, Cr. Dn., 1893—*J.N.* [June 1894.
- S. polygonorum**, Fr. On sweet-dock leaves, H. Gr.—*Nat.*,

- Metasphæria complanata**, (Tode) Sacc. On decaying cabbage-stalk, Bn. Cl., 1897—*H.T.S.*!
- Leptosphæria acuta**, (Moug.) (*Sphæria acuta*, Moug.) On dead nettle and other herbaceous stems, Cr. Dn., El. Pk. Wd.
- L. doliolum**, (Pers.) (*Sphæria doliolum*, Pers.) On rotten wood, Heb. Bdg., 1892—*J.N.* On nettle stems, Copley—*H.T.S.*
- L. derasa**, (B. & Br.) (*Sphæria derasa*, B. & Br.) On ragwort stems, Pck. Wd.—*J.N.*!
- Pleospora herbarum**, (Pers.) (*Sphæria herbarum*, Pers.) On dead herbaceous stems, Hdc.—*J.N.*; bean stalks, Clover Hill, Hx.—*H.T.S.*; potato haulms, near El. Pk. Wd.; ragwort, Lud. Dn.!
- Ophiobolus porphyrogonus**, (Tode.) Reiss. (*Sphæria rubella*, Pers.) On decaying stem of *Cnicus palustris*, El. Pk. Wd.—*H.T.S.*; and of *Epilobium hirsutum*, Heb. Bdg.—*J.N.*
- O. acuminatus**, (Sow.) Reiss. (*Sphæria acuminata*, Sow.) On decaying stems of *Cnicus palustris*, Cr. Dn.!
- Wallrothiella minima**, Sacc. On decorticated wood, Salterhebble and N. D. Wd.; on honeysuckle, H. Gr.—*H.T.S.* First British record.
- Chætomium elatum**, Kze. On decaying straw, Lightcliffe! old rope, Hx.; dead thistle, Bn. Cl. etc.—*H.T.S.*
- Lasiosphæria spermoides**, (Hoffm.) 1789. Hx. "Grows most frequently on the end of the grain, on stumps of trees, rarely on the side of the grain"—*Bolton*, Tab. 122, f. 2. N.D. Wd., El. Pk. Wd., Cr. Dn., etc.!
- L. ovina**, (Pers.) C. & De N. (*Sphæria ovina*, Pers.) Common on rotting wood in damp woods.
- Melanomma pulvis-pyrius**, (Pers.) Fckl. (*Sphæria*, Pers.) On dead wood, Pck. Wd., etc., Heb. Bdg.—*J.N.* El. Pk. Wd., Sun Wd. on holly, Upper Shibden—*H.T.S.*
- Chætosphæria phæostroma**, Fckl. (*Sphæria*, Mont.) On dead wood, Walter Clough, Southowram—*H.T.S.*
- Sordaria fimicola**, (Rob.) Lud. Dn.; Copley—*H.T.S.*!
- Podospora coprophila**, (Fr.) Ces. (*Sphæria coprophila*, Fr.) On cow dung, Mdgh.—*J.N.* Lud. Dn., Mixenden, etc.!
- P. curvula**, (De By.) Ces. On cow dung, Mixenden Ings; Skircoat Moor; Elland; Shibden; Lud. Dn., etc.—*H.T.S.*! Hdc.—*J.N.*
- forma **coronata**, Wint. Mdgh.—*J.N.*
- P. fimiseda**, (C. & De N.) On rotting cloth-tab carpet, Pck. Wd.—*J.N.*!



- P. minuta**, (Fckl.) Ces. On rabbit dung near Hdc.—*J.N.* !  
**Hypocpra Serignanensis**, Sacc. *Syl.* I., p. 244. Tippet-  
 holme, near Heb. Bdg. First British record—*Nat.*,  
 Jan. 1900; *Hx. Nat.*, IV., p. 114  
**Sporormia minima**, Awd. On rabbit dung, Hdc.—*J.N.*  
**S. intermedia**, Awd. Cr. Dn.—*J.N.* !

## CERATOSTOMACEÆ.

- Gnomonia Needhami**, Mass. & Crossl., *Nat.*, Jan. 1904.  
 On dead pine-needles, Cr. Dn., 1897—*J.N.*,  
**G. setacea**, (Pers.) C. & De N. (*Sphæria setacea*, Pers.)  
 On sycamore petioles, Mdgh.—*J.N.* ! Stanelly Cl.—*H.T.S.*

## XYLARIACEÆ.

- Hypoxylon atropurpureum**, Fr. On stump, Cr. Dn.  
**H. fuscum**, (Pers.) Fr. (*Sphæria fusca*, Pers.) “Common on  
 hazel branches.....in woods and hedges about Halifax,”  
 1789—*Bolton*, Tab. 123, f. I., *S. tuberculosa*. Not met  
 with here recently, but frequent in other districts.  
**Daldinia concentrica**, (Bolt.) C. & De N. (*Sphæria concentrica*,  
 Bolt.) “On old thorns in the Park at Fixby Hall; it  
 has also been gathered near Elland”—*Bolton*, Tab. 180.  
 On old ash logs, Hoylehouse, Lightcliffe, 1892! on logs  
 in wood-yard, Heb. Bdg., 1896—*J.N.*  
**Ustulina vulgaris**, Tul. (*Sphæria deusta*, Hoffm.)  
 1790. “On stump of old ash tree, Elland”—*Bolton*, Tab. 181.  
**Poronia punctata**, Fr. “Grows on dry dunghills about Hx.  
 in Winter and Spring”—*Bolton*, Tab. 127, f. 2.  
**Xylaria Hypoxylon**, (L.) Grev. 1775—*Bolton*, Cat. No. 474;  
 1788, Tab. 129. Common on dead stumps in woods.  
**X. polymorpha**, (Pers.) Grev. Halifax—*Bolton*, unpublished  
 drawing Tab. 213, in Brit. Mus. (Nat. Hist.) collection.  
 On dead stumps, Hunger Hill and Heath, Hx.—*H.T.S.*  
 Ovenden; N. D. Wd. !

## VALSACEÆ.

- Quaternaria dissepta**, (Fr.) Tul. On fallen elm-branch, Bn.  
 Cl., 1899.  
**Valsa leucostoma**, Fr. Gibson Wd., Hept.—*Nat.*, June 1894.  
**V. turgida**, Fr. On twig, Walshaw, 1894—*J.N.*  
**Eutypa lata**, (Pers.) Tul. Encrusting dry dead branches,  
 Heb. Bdg.—*J.N.*  
**Diatrype stigma**, (Hoffm.) On twig, El. Pk. Wd.—*H.T.S.* !  
**D. bullata**, Fr. (*Sphæria depressa*, Bolton.) 1789. Hx. “On  
 the exterior of the bark of fallen and decaying branches  
 of trees”—*Bolton*, Tab. 122, f. 1.



- D. cincta**, B. & Br. Gibson Wd.—*Nat.*, June '94. El. Pk. Wd.!  
**Diaporthe rostellata**, (Fr.) Nitsch. (*Sphæria*, Fr.) On dead wood, Cr. Dn., 1892—*J.N.*!  
**Fenestella tetrarupha**, (B. & Br.) Sacc. El. Pk. Wd.!

## DOTHIDEACEÆ.

- Phyllachora graminis**, (Pers.) Fckl. On leaves of *Deschampsia cæspitosa*, Hdc.—*J.N.*  
**P. junci**, Fckl. On *Juncus* stems, Cr. Dn.—*J.N.*!  
**Rhopographus pteridis**, (Sow.) Wint. (*Dothidea flicina*, Fr.) On bracken, Cr. Dn., Hdc., Lud. Dn., El. Pk. Wd., etc.

## HYPOCREACEÆ.

- Nectria cinnabarina**, (Tode.) Fr. Very common on dead fallen branches and trunks (the first fungus to appear), especially of beech, in woods. Semi-parasitic; occasionally seen on young trees which it kills.  
**N. coccinea**, Fr. 1789. "Found in great plenty about Halifax in Jan. and Feb."—*Bolton*, Tab. 120, f. 1. Heb. Bdg. 1892—*J.N.* On twig, El. Pk. Wd., 1894!  
**N. peziza**, Fr. On bark, Cr. Dn. 1894—*H.T.S.*! [*J.N.*  
**N. sanguinea**, (Bolt.) Fr. On elm bark and wood, Cr. Dn.—  
**N. mammoides**, Phil. & Plow. On bark, El. Pk. Wd.; Hdc.  
**N. episphæria**, (Tode.) Fr. On *Valsa turvıda*, 1894—*J.N.*  
**N. bryophila**, Sacc. On moist, partially decayed *Sphagnum* in greenhouse, Nut Clough, Hebden Bridge—*J.N.* First British record, *Hx. Nat.*, V., p. 120.  
**N. pumila**, Schum. H. Gr., 1893—*Nat.*, June 1894.  
**Sphærostilbe gracilipes**, Tul. On oak twigs, Heb. Bdg., 1897—*J.N.* Both conidial and ascigerous conditions.  
**Hypocrea rufa**, (Pers.) Fr. 1789. Hx.—*Bolton*, Tab. 121, f. 2. Common in its conidial stage on cut or bruised surfaces of wood; is a regular frequenter of wood-yards. Much less common in the ascigerous or mature stage.  
**H. riccioides**, (Bolt.) Berk. "On dead branches close by the brook below Ramsden Wood, Feb. 1790"—*Bolton*, Tab. 182.  
**Hypomyces chrysospermus**, Tul. Common in its conidial condition, as a parasite on several species of *Boletus*, which it soon reduces to a shapeless mass.  
**H. torminosus**, Tul. Parasitic on the gills of *Lactarius torminosus*, Cr. Dn.—*J.N.*!  
**H. aurantius**, Tul. On old *Polyporus versicolor*, Elland Hall Wd. and El. Pk. Wd.—*H.T.S.*!

- H. terrestris**, Plow. & Boud. On the ground where some fleshy toadstool had decayed, Lud. Dn., 1898—*H.T.S.*
- Calonectria vermisporea**, Mass. & Crossl., *Nat.*, Jan. 1904. On decorticated fallen trunk, Hdc., 1897—*J.N.*
- C. hirta**, (Blox.) Sacc. On wood rails, Heb. Bdg.—*J.N.*
- Gibberella cyanogena**, Sacc. *Syl.* II., p. 555. On dead cabbage-stalk, Salterhebble—*H.T.S.* [—*J.N.*
- Epichloe typhina**, (Pers.) Fr. On living grass stems, H. Gr.
- Claviceps purpurea**, (Fr.) Tul. Ergot. Parasitic on inflorescence of the grass *Glyceria fluitans*, canal side, Copley; pond, Pk. Gt.; dam side, Lud. Dn.!
- Cordyceps entomorrhiza**, (Dicks.) Link. On the dead remains of some dipterous insect half buried among the roots of grass, H. Gr.—*Hx. Nat.*, I., p. 92.
- C. militaris**, (L.) Link. Halifax—*Bolton*, Tab. 128. On dead pupæ partially buried in soil, mostly among grass, Hurst, H. Gr., Cr. Dn., etc.—*J.N.* Cr. Va., Stainl., etc.!
- C. capitata**, (Holmsk.) Link. "Ramsden Wood near Hx.," *Bolton*, Tab. 130. Parasitic on a subterranean fungus, *Elaphomyces granulatus* or *E. variegatus*.

## LOPHIOSTOMACEÆ.

- Lophiostoma caulium**, (Fr.) De Not. On *Epilobium hirsutum*, H. Gr., etc.—*Nat.*, June 1894.

## HYSTERIACEÆ.

- Hysterographium fraxini**, (Pers.) 1789. "Grows about Halifax, on twigs and branches of ash trees when in decay"—*Bolton*, Tab. 124.
- Lophodermium pinastri**, (Schrad.) Chev. Parasitic on pine leaves, Cr. Dn., 1899—*J.N.*
- Dichæna quercina**, (Pers.) On dead oak wood, Hdc.

## DISCOMYCETES.

## HEVELLACEÆ.

- Morchella esculenta**, (L.) Pers. "Grows in sandy meadows about the river Calder, but rarely. It is greatly esteemed as an esculent"—*Bolton*, Tab. 91. Hollins Wood, Warley, 1891! Edible.
- Gyromitria esculenta**, (Pers.) Fr. Edible. On the butterbur bank parting the canal and river, between Salterhebble and Elland, 1897—*H.T.S.* Has been met with each spring since—*Hx. Nat.*, IV., p. 19.
- Helvella crispa**, Fr. Edible. Pck. Wd., 1892—*J.N.*
- H. lacunosa**, Afz. Edible. Pck. Wd., 1892, etc.—*J.N.*
- H. fusca**, Gillet. Pck. Wd., 1897—*J.N.*!

- H. elastica**, Bull. "Grows in the shady parts of moist woods, and is a rare plant about Halifax—except in the year 1777, when it abounded in many woods, hedges, etc."—*Bolton*, Tab. 95.
- H. macropus**, (Pers.) Karst. "A rare plant here, I have only seen it in two places. The specimens figured [were] gathered in a wood below Highfield, three miles from Hx., Sep. 1787"—*Bolton*, Tab. 96.
- Leotia lubrica**, Pers. On wet, mossy ground: 1891, H. Gr., plentiful each season; Cr. Dn.—*J.N.* Lud. Dn.!
- L. acicularis**, Pers. "Grows about the roots of trees, under the hypnum and other mosses, in the moist and shady parts of woods about Hx."—*Bolton*, Tab. 98, f. 1. Still common under the above conditions!
- Mitrula phalloides**, (Bull.) Chev. (*M. paludosa*, Fr.) In swampy places on rotting leaves, Lud. Dn., 1891—*J.T.A.*; Hollock Lea—*J. H. Bolton*; Hand Carr Clough, Sowerby.—*U. Bairstow*; Bn. Cl.! all on oak leaves. Hdc. and Cr. Dn., oak and pine—*J.N.*
- M. olivacea**, (Pers.) Sacc. (*Leptoglossum olivaceum*, Cke.) Among short grass, Cr. Dn., 1891; Pck. Wd., 1896—*J.N.* Among *Sphagnum*, Wade Wood, 1898—*H.T.S.*
- Geoglossum glutinosum**, Pers. N. D. Wd.—*H.T.S.* Acre, Hept.—*Nat.*, June 1894, Hurst fields, Cr. Dn.—*J.N.*!
- G. viscosum**, Pers. Among short grass, Skircoat; N. D. Wd. bottom—*H.T.S.* Lud. Dn.!
- G. glabrum**, Pers. (*Clavaria ophioglossoides*, L.) 1775. Hx.—*Bolton*, Cat. No. 475. "Grows in moist pastures among grass in several places about Halifax"—*Bolton*, Tab. 111, f. 2. In pastures, Hept., Cr. Dn.—*J.N.* Lud. Dn.; Stump Cross—*H.T.S.*
- G. difforme**, Fr. Field, Stump Cross, 1895—*H.T.S.*!
- G. hirsutum**, Pers. In pastures, Cr. Dn., several places; Mdgh. Road—*J.N.* Lud. Dn.!
- Spathularia clavata**, (Schæff.) "Grows in the plantations about Fixby Hall, Sept. & Oct.—*Bolton*, Tab. 97.
- Vibrissia truncorum**, (A. & S.) Not uncommon on dead twigs lying in woodland rills. Stations many.
- V. Guernisaci**, Crouan. Not uncommon on decorticated wood and branches in water. Several places in Cr. Dn., & Hdc.; on root stock of live ash, H. Gr.—*J.N.* Colden Cl., El. Pk. Wd., etc.—*Nat.*, June 1894.

## PEZIZACEÆ.

- Acetabula vulgaris**, (L.) Fckl. (*Peziza acetabulum*, L.)  
1775. Halifax—*Bolton*, Cat. No. 468.
- Geopyxis coccinea**, (Jacq.) Mass. 1789. "Grows about rivulets in woods about Hx., plentifully"—*Bolton*, Tab. 104. On dead branches in woods; frequent in some districts, but has disappeared from this locality.
- G. parvispora**, Mass. (*Sarcoscypha tenuispora*, Cke. & Mass. Grev. xxi., p. 121). On damp sticks, Hdc., Cr. Dn.
- G. cupularis**, (L.) Sacc. On the ground, Mdgh., Pck. Wd.
- G. albida**, (Gillet) Mass. (*Alcuria albida*, Gillet). On greasy soil, warehouse basement, Hx. 1895—*H.T.S.* First British record, *Nat.*, Jan. 1900.
- Peziza vesiculosa**, Bull. Hx. 1790—*Bolton*, Tab. 175. Common and often abundant; in dense clusters, or solitary, on soil heaps, etc. Specimens 6in. across were met with at Chevin Edge, 1892, on charred ground.
- P. cerea**, Sow. On dye-house wall, Dean Clough—*H. Dyson*; on damp, dust-covered cellar wall, Cheapside: and cellar window area, King Cross St., Hx.! On weaving-shed wall, on plaster of new house, and on disused moulding-sand, in foundry, Hebden Bridge—*J.N.*
- P. reticulata**, Grev. On the ground, canal bank below Salterhebble, 1897—*H.T.S.*
- P. linteicola**, Phil. & Plow. On cast-out, rotting, cloth-tab hearth rug, Pck. Wd., 1894, etc., and on decaying straw, Lee Mill Rd., Heb. Bdg.—*J.N.!*
- P. repanda**, Wahl. On the ground, Mdgh. Wd., 1898—*J.N.*
- P. sepiatra**, Cke. On the ground, Pck. Wd., 1896, and on road scrapings, Mdgh. Rd., 1898—*J.N.!*
- P. recedens**, Boud. On the cortex side of decaying tub-garth lying partly in stagnant pool, Sun Wd., 1892! First British record—*Nat.*, Jan., 1904.
- P. venosa**, Pers. On the ground, Bank House Wd.—*H.T.S.*
- P. ampliata**, Pers. On decaying root, Heath—*H.T.S.*  
Var. **tectoria**, (Cke.) Mass. In wall crevice, Clover Hill! on wood in new house, Nut Clough, and on old dye-ware tub, Lee Mill, Heb. Bdg.—*J.N.!*
- P. subrepanda**, Cke. & Phil. Road scrapings, Pck. Wd.
- P. mellea**, Cke. & Plow. On decaying wood, Heb. Bdg.
- P. badia**, Pers. On the ground, Hept., Pck. Wd., Cr. Dn., Mdgh., etc.—*J.N.* Lud. Dn., N.D. Wd., etc.!
- P. lividula**, Phil. On the ground, Wade Wood.—*H.T.S.!*

- P. pustulata.** On charcoal bed, Cr. Dn., 1894—*J.N.!*
- Otidea cochleata,** (Bull.) Fckl. "About Halifax in autumn, plentiful."—*Bolton*, Tab. 99. Copley, 1891, Elland! Hept., Mdgh. Rd., Pck. Wd., H. Gr., Pellon.—*J.N.*
- O. aurantia,** (Pers.) Mass. 1789. "Grows on moist gravel which has been lately turned up in garden walks, by way sides, etc., Halifax."—*Bolton*, Tab. 100. Not uncommon; has been met with on road sides, among trod engine ashes, on the ground in woods, among moulding sand in foundry yard, etc. Stations, many.
- Curreyella trachycarpa,** (Currey.) Mass. On burnt ground, Cr. Dn.—*J.N.* Bn. Cl., 1892!
- Barlæa Crouani,** (Cke.) Mass. Among moss on walls, El. Pk. Wd., Salterhebble, Skircoat (Burnley Rd.)—*H.T.S.!* Mdgh., Broadbottom, Hdc., Pck. Wd., etc.—*J.N.!*
- B. modesta,** (Karst.) Sacc. Among hepatics on sandy soil, stream bank, Wade Wd., Lud. Dn., Oct. 1898—*T. W. Woodhead.* Distinguished from near allies by its spine-clad spores. First British record, *Nat.* Jan. 1899.
- B. cinnabarina.** Sacc. (*Peziza lætirubra*, Cke.) On sandy ground, Mdgh—*Nat.*, June, 1894.
- B. asteroidea,** (Habl.) Sacc. Among moss on west face of walls, Skircoat Green, Copley, El. Pk. Wd., Upper Shibden, etc.—*H.T.S.!* On ground, Keb Cote.—*J.N.!*
- B. Persooni,** (Crouan) Sacc. On mossy ground, Heb. Bdg. El. Pk. Wd., Salterhebble. Was at first confused with *B. violascens* (Cke.) Mass.—see *Nat.*, Jan., 1900. First British record.
- B. areolata,** (Cke.) Mass. On the ground, Bn. Cl.—*H.T.S.*
- Sepultaria semiimmersa,** (Karst.) Mass. On barish ground, Mdgh., and Pck. Wd.—*J.N.*
- Humaria rubens,** Boud. Among moss on wall top, Nut Clough, Heb. Bdg., and on the ground, Cr. Dn. *Nat.*, Jan., 1899. First British record.
- H. Chateri,** (W. G. Smith) Sacc. (*Peziza Chateri*, Sm.) On the ground, Hollins, Hept.—*Nat.* June, 1894.
- H. hæmastigma,** (Hedw.) Mass. On mortar, wall top, roadside, Pck. Wd., 1898.—*J.N.!*
- H. rutilans,** (Fr.) Sacc. 1789. Halifax. "Grows on old walls and rocks amongst moss, particularly *Polytrichum minus.*"—*Bolton*, Tab. 101, f. 1.

- H. Piggotti**, (B. & Br.) Sacc. On colour-washed plaster on wall in one of the rooms at the Higher Board School, Hx., May, 1895—*H. Waterworth!*
- H. convexula**, (Pers.) Quel. Embedded in moss on wall top, Pck. Wd., Mdgh.; on ground near Foster Mill.—*J.N.* On wall, Hipperholme, N. D. Wd., etc.—*H.T.S.!*
- H. carbonigena**, (Berk.) Sacc. On burnt ground, Cr. Dn.—*J.N.* Near N. D. Wd.—*H.T.S.!* [1899—*J.N.*
- H. melaloma**, (Fckl.) Mass. On burnt ground, Hollins, Hept.,
- H. macrocystis**, (Cke.) Sacc. On burnt ground in wood, Cr. Dn., Mdgh., and El. Pk. Wd. bottom.—*J.N.!*
- H. Roumegueri**, (Karst.) Sacc. On the ground in a wood, Broadbottom.—*J.N.!*
- Var. **carnosissima**, Phil. A form between the type and var. on heathy ground on the moor above Lumb Fall, Dec., 1902—*Jonas Bradley!*
- H. granulata**, (Bull.) Sacc. Exceedingly common on cow dung in pastures, everywhere.
- M. subhirsuta**, (Schum.) Mass. On bare ground, El. Pk. Wd. in great quantity, May, 1896. A patch of three or four square yards in extent was an almost unbroken yellow, with its ascophores. In 1897, it was sparingly scattered, and disappeared altogether in 1898-9. Norland, 1898—*H.T.S.!*
- H. deerata**, (Karst.) Sacc. (*Pseudombrophila Pedvottii*, Boud). On decaying flax backing of cast out hearth rug, Pck. Wd., June, 1897.—*J.N.!* First British record, *Hx. Nat.* II., p. 58. See *Nat.*, Jan., 1899, p. 28, figs. 1-8, for description and drawings.
- H. violacea**, (Pers.) Sacc. On the ground, Pck. Wd., Cr. Dn., Mdgh., Nut Clough, and on lime in seams of newly-built wall, Heb. Bdg.—*J.N.* On the ground, El. Pk. Wd., N. D. Wd., near Ringstone reservoir—*H.T.S.!*
- H. purpurascens**, (Pers.) Sacc. Heb. Bdg.—*J.N.!*
- H. jungermania**, (Nees.) Sacc. On living hepatics, Hudson Clough, Stansfield, Mar., 1897. One of the very few green fungi.
- H. cervaria**, (Phil.) Sacc. On sheep and rabbit dung, near Heb. Bdg., 1899—*J.N.!*
- H. Oocardii**, (Kalch.) On dead thorn-tree roots in streams, Rishworth, Stainl., Beaumont Clough! On root (sp.?) Bn. Cl. On larch cones lying in swamp, Hdc.—*J.N.*



A semi-aquatic fungus; see *Nat.*, June, 1901, for revised diagnosis taken from these specimens.

- H. fimeti**, Fckl. (*H. bovina*, (Phil.) Sacc.) 1789. "On dry dunghills.....in several places about Halifax, but not in plenty"—*Bolton*, Tab. 109, f. 2. On cow dung, Copley, 1898—*H.T.S.*
- Lachnea coprinaria**, (Cke.) Phil. Frequent on cow dung in pastures; records many.
- L. stercorea**, (Pers.) Gillet. "In fields about Hx., plentifully," 1782—*Bolton*, Tab. 108, f. 1. On cow dung, Green Hurst, Cr. Dn.—*J.N.* Lud. Dn., Skircoat Moor, and in field near El. Pk. Wd.—*H.T.S.*
- L. setosa**, (Nees). On fragments of wood embedded in clayey ground, Bn. Cl.—*H.T.S.*
- L. hybrida**, (Sow.) Var. **lapidaria**, Cke. In the soil-seams of paving-stones, warehouse yard, Hx., 1895—*H.T.S.*
- L. ascoboloides**, (Bert.) Mass. On bare, damp soil, Sun Wd.—*Nat.*, June 1894. Mdgh.—*H.T.S.*
- L. hirta**, (Schum.) Gillet. Among moss, N.D. Wd.—*H.T.S.*!
- L. scutellata**, (L.) 1775. *Bolton*, Cat. No. 470. Common on logs, dead branches, twigs, etc., in damp places, and on wet decaying woodwork of bridges and other structures! On rotten sacking, Lee Mill, Heb. Bdg.—*J.N.* The *L. hirta-coccinea*, *Nat.*, June 1894, is only a form of this sp.
- L. umbrorum**, (Cke.) Gillet. On bare, damp ground; or on road scrapings, in shady places: Hdc., Mdgh., Pck. Wd., etc.—*J.N.*; Sterne Mill, Bn. Cl., El. Pk. Wd.!
- L. theleboloides**, (A. & S.) Gillet. Market garden, Skircoat, in vast quantity on spent-hop midden, Nov. 1897—*H.T.S.*!
- L. dalmeniensis**, (Cke.) Phil. On the ground, principally in nettle beds, Pck. Wd., Cat Holes Cl., etc.—*J.N.*
- L. Lojkæana**, Rehm. On soil adhering to old tub in dye-house yard, Lee Mill, Heb. Bdg. First British record—*Nat.*, June 1901.
- L. fimbriata**, Quel. On moist dust lining the wall of cellar window area at my place of business. First British record—*Hx. Nat.*, VII., p. 109.
- L. hemispherica**, (Wigg.) Gillet. "In the shady part of Elland Park [Wood] where the ground is wet and the soil consists of vegetable mould"—*Bolton*, unpublished Tab, 209, Brit. Mus. (Nat. Hist.) Collection.



- L. sublivida**, Sacc. In foundry, Heb. Bdg., on pig-iron lightly covered with fine sand, 1894; Albert foundry yard, Pellon, 1902, and Foster Mill, Heb. Bdg., 1903—*J.N.* First British record.
- L. gregaria**, (Rehm) Phil. On sandy ground, Pck. Wd.
- L. cretea**, (Cke.) Phil. On newly-limed wall, Pck. Wd.—*J.N.*
- Sphærospora trechispora**, (B. & Br.) On the ground under elder bush, 1889, Bn. Cl.—*Hx. Nat.*, V., p. 104. Brighthouse, Sun Wd., Lud. Dn.! Cr. Dn. and Pck. Wd.—*J.N.*
- Neottiella nivea**, Romell. On bare ground, Bn. Cl. (Norland Cl.), 1892—*H.T.S.*! Recorded in *Nat.*, June 1894, as *Lachnea fossula* = *Neottiella fossula*. First British record. Hdc., Mdgh.—*J.N.* Lud. Dn.—*H.T.S.*
- N. leucoloma**, (Hedw.) Mass. On the ground among moss, N. D. Wd. On mossy wall, Mdgh.—*H.T.S.*
- Sclerotinia tuberosa**, (Hedw.) Fckl. Springing from sclerotia attached to the rhizomes of *Anemone nemorosa*, H. Gr., 1891; Cr. Dn., 1894—*J.N.*
- S. rapula**, (Bull.) Rehm. "On the ground in gardens and corn-fields, in places where the soil has been lately turned up for cultivation"—*Bolton*, unpublished Tab. 210, Brit. Mus. (Nat. Hist.) Collection.
- S. sclerotiorum**, (Lib.) Mass. On the ground, from sclerotia formed on butter bur, El. Pk. Wd. 1895—*H.T.S.*!
- S. Candolleana**, (Lév.) Fckl. On decaying oak leaves, Hdc., 1895—*J.N.*
- S. Curreyana**, (Berk.) Karst. From sclerotia formed inside fading or dead culms of various rushes: Cr. Dn., 1892 *J.N.* El. Pk. Wd., 1893, and Rishworth, 1899!
- Ciboria ochroleuca**, (Bolton) Fckl. (*Peziza ochroleuca*, Bolton; *Peziza firma*, Pers.) "Several places near Hx., on putrid wood in moist places," 1789—*Bolton*, Tab. 105, f. 1. "Bolton's name—quoted by Persoon—is restored, as there is no mistaking his excellent figure and description"—*Mass. Brit. Fung. Fl.* iv., p. 275. On oak twigs in water, El. Pk. Wd.! H. Gr., Cr. Dn.—*J.N.*
- C. amentacea**, (Balb.) Fckl. On decaying willow and alder male catkins, H. Gr. & Hdc.—*J.N.* Lud. Dn.—*H.T.S.*
- Helotium claro-flavum**, (Grev.) Berk. On wood, El. Pk. Wd.!
- H. badium**, Phil. On dead, wet twigs, Hebden Hey—*J.N.*
- H. ferrugineum**, (Schum.) On dead oak twigs, thorn wood, alder root, etc., Cr. Dn., Pck. Wd., H. Gr.—*J.N.*!

- H. lenticulare**, (Bull.) On dead twigs and wood, Cr. Dn., Pck. Wd., and N. D. Wd.—*J.N.*!
- H. terrigenum**, Cke. & Phil. On the ground, Pck. Wd.—*J.N.*
- H. pallescens**, (Pers.) On decaying trunks, stumps and branches of various trees. Common. On living sycamore root-fork in rill, Pck. Wd., June 1903—*J.N.*!
- H. Fuckelii**, Mass. (*Hym. sordida*, Fckl.) Hdc.—*Nat.*, June '94.
- H. aureum**, (Pers.) On twigs, rill side, Rishworth!
- H. serotinum**, (Pers.) "Grows on sticks, stalks of plants, etc., in moist and watery places in woods," 1789—*Bolton*, Tab. 98, f. 2. On decaying leaf stalks, Bn. Cl.—*H.T.S.*
- H. melleum**, B. & Br. On rotten wood, Gibson Wd.—*Nat.*, June 1894. On rotten branch, Wade Wd., Lud. Dn.!
- H. lutescens**, (Hedw.) On dead branches, Pck. Wd.—*J.N.*
- H. uliginosum**, Fr. On dead wood, twigs, etc., in swamps.
- H. virgultorum**, (Vahl.) Karst. On decaying holly-wood, El. Pk. Wd. ! on decorticated wood, Cr. Dn. & Hdc.—*J.N.*
- H. sublenticulare**, Fr. Bob Wd., Cr. Dn., 1895—*J.N.*
- H. moniliferum**, (Fckl.) Mass. On sawn surface of beech tree stump, along with its conidial stage, Fixby, 1894.
- H. cyathoideum**, (Bull.) Karst. Hx.—*Bolton*, Cat. No. 469. Common everywhere on dead herb. stems in moist places.
- H. scutulium**, (Pers.) Karst. Common on decaying herbaceous stems of various kinds in moist places in woods; also noted on decaying acorn.
- H. herbarum**, (Pers.) Fr. Frequent on decaying stems of nettle, butterbur, etc., Sun Wd., Bn. Cl., Pck. Wd., Hdc., etc.
- H. repandum**, Phil. On old stems of meadow sweet, Cr. Dn.; dock, and flax backing of cast-out hearthrug, Pck. Wd.; on chervil, Rishworth; on *Epilobium*, Heb. Bdg.—*J.N.*
- H. epiphyllum**, (Pers.) Fr. Frequent on petioles and veins of oak, beech, and sycamore, dead leaves. Records many.
- H. albidum**, (Rob.) Var. *æsculi*, Phil. On decaying petioles of horse-chestnut, Lud. Dn., 1896!
- H. alniellum**, Karst. On fallen catkins of alder, H. Gr.
- H. gramineum**, Phil. On dead grass, Pck. Wd.—*J.N.* Stump Cross and El. Hall Wd., 1898.—*H.T.S.*
- H. nitidulum**, (B & Br.) Mass. On grass.—*Nat.* June, 1894.
- H. eburneum**, (Rob.) Gillet. On grass, H. Gr.—*J.N.*
- H. conigenum**, (Pers.) Fr. On pine cones, H. Gr.; Cr. Dn.
- H. lacteum**, (Cke. & Phil.) On horse dung, Copley.—*H.T.S.*

- H. tuba**, (Bolton.) Fr. "This beautiful little *Peziza* adheres by a claw at the base to the putrid stems of decaying plants in moist places near rills of water. It is shaped like a trumpet in miniature. The height about half an inch. The colour bright pale yellow."—*Bolton*, Tab. 106 f. 1 = *Peziza tuba*.
- Cyathicula coronata**, (Bull.) De Not.  
1789 Hx. "On putrid vegetable substances, in damp places in woods, and about rivulets."—*Bolton*, Tab. 106 f. 2 = *Peziza inflexa*. Still plentiful, in season, in Pck. Wd. but always on dead nettle-stems.
- Pocillum Needhami**, Mass. & Crossl. 1894. On dead oak-leaves, El. Pk. Wd.—*J.T.A.*! First record, *Mass. Brit. Fung. Fl.*, iv., p. 498.
- Belonidium ventosum**, (Karst.) Phil. On cortex of willow twig, N. D. Wd.—*H.T.S.*! on wood, Cr. Dn.—*J.N.*
- B. cyanites**, (Cke. & Phil.) Mass. On dead stems of *Epilobium hirsutum*, H. Gr.—*Nat.*, June 1894.
- B. pruinatum**, (Jerdon) Mass. Frequent on bark of fallen branches and twigs of various trees, also on the effused stroma of *Eutypa lata* and other pyrenomycetes; and on dead stems of *Epilobium hirsutum*—*J.N.*!
- B. lacustre**, (Fr.) Phil. On sheaths of *Glyceria aquatica*, canal side, El. Pk. Wd., and on other dead grass stems at the by-wash, Cr. Dn.—*J.N.*!
- B. pullum**, Phil. & Keith. On decaying grass, Hdc.—*J.N.*!
- Belonium pilosum**, Crossl. On dead stems and leaves of *Carex pendula*, El. Pk. Wd., May 1899. First record and description—*Nat.*, Jan. 1900, pp. 6 & 10, figs. 7-14.
- Mollisia melaleuca**, (Fr.) Sacc. On decaying wood, Staups Cl.; El. Pk. Wd. and Skircoat—*H.T.S.*!
- M. cinerea**, (Batsch.) Karst. In every shaded place, where any wood exists either in the shape of roots, trunks, branches, or twigs. Very common.
- M. aquosa**, (B. & Br.) Phil. On dead *Salix* branches, and on other bark and wood, Cr. Dn.—*J.N.*
- M. lignicola**, Phil. On decaying wood, Lightcliffe; El. Pk. Wd.—*Nat.*, June 1894. Stump Cross, Bn. Cl., Cr. Dn., etc.
- M. fusca**, (Sacc.) Mass. (*Lachnella Schumacheri*, Phil.) On wood, H. Gr.—*J.N.* Walter Cl. and Shibden—*H.T.S.*!
- M. livido-fusca**, (Fr.) Gillet. On decorticated wood, Cr. Dn.—*J.N.*! First British record, *Nat.*, Jan. 1904.

- M. atrocinerea**, (Cke.) Phil. Common on dead herbaceous stems of various kinds.
- M. atrata**, (Pers.) Karst. Common on dead herbaceous stems.
- M. ulmariæ**, (Lasch.) On meadow-sweet stems, Cr. Dn.
- M. mercurialis**, (Fckl.) Sacc. On dogs' mercury stems, El. Pk. Wd. and Cr. Dn.—*J.N.*!
- M. urticicola**, Phil. On dead nettle-stems, Turner Cl.!
- M. effugiens**, (Rob.) Phil. On dead herbaceous stems, H. Gr.—*Nat.*, June 1894. Cr. Dn.; Pck. Wd.; Salterhebble, etc.
- M. carduorum**, (Wint.) On dead thistle (*Cnicus lanceolatus*) stems, Copley and Salterhebble—*H.T.S.*! [*—H.T.S.*!]
- M. dilutella**, Phil. On dead *Epilobium hirsutum*, Salterhebble
- M. nervicola**, (Desm.) Gillet. On the veins of dead oak and sycamore leaves, Hdc.; Mdgh.; Cr. Dn.—*J.N.*! First British record, *Nat.*, June 1901.
- M. betulicola**, (Fckl.) Rehm. On decaying birch leaves, Cr. Dn. First British record—*Nat.*, Jan. 1900.
- M. plantaginis**, Fckl. On dead flower-stalks of *Plantago major*, El. Pk. Wd.—*Nat.*, June 1894.
- M. juncina**, (Pers.) Rehm. On dead culms of *Juncus* and *Carex*, El. Pk. Wd.; Hdc.; Cr. Dn.—*J.N.* Soil Hill, Ovenden, on *C. vulgaris*, June 1898—*H.T.S.*!
- M. chionea**, Mass. & Crossl. On *Carex pendula*, El. Pk. Wd. First British record—*Jour. Bot.*, 1896, p. 154, pl. 357.
- M. stramineum**, (B. & Br.) Phil. On decaying grass, Soil Hill; Salterhebble; Elland.—*H.T.S.*! Cr. Dn., H. Gr., and Mdgh.—*J.N.*
- M. dactyligluma**, Cke. On cocks'-foot grass, El. and Cr. Dn.
- M. pineti**, (Batch.) Phil. On pine needles, Hdc.—*J.N.*
- M. fallax**, (Desm.) On pine and larch cones—*Nat.*, June 1894. On pine needles, Pck. Wd.; pine branch and cones, Cr. Dn.—*J.N.*!
- M. pteridina**, Karst. On decaying ferns, (*A. filix-foemina*), H. Gr. First British record—*Nat.*, Jan. 1899, pp. 28 and 31, figs. 18-21.
- M. versicolor**, Phil. On decaying bracken, H. Gr.—*J.N.*
- M. hypnorum**, (Fr.) Mass. On mossy wall, Butts Cl., Rishworth. First British record—*Hx. Nat.*, VI., p. 124.
- Pseudopeziza trifolii**, (Bernh.) Fckl. On living leaves of red and white clover, N. D. Wd. and Mdgh.—*J.N.*!
- P. graminis**, (Desm.) Mass. On dead grass, Hdc. & Cr. Dn.
- P. rubi**, (Fr.) Mass. On dead blackberry stems, Dudwell.

- P. palustris**, (Rob.) Mass. On dead stems and leaves of *Juncus* spp., Hept.; Rishworth; Hdc.—*J.N.*!
- P. benesueda**, (Tul.) Mass. On dead alder twig, Mdgh.!
- P. discolor**, (Mont.) Mass. (*Mollisia vicia*, Sacc.) On wood, Cr. Dn.—*J.N.* Walter Cl., Jan. 1898—*H.T.S.*!
- Tapesia fusca**, (Pers.) Fckl. On decaying wood, Mdgh., H. Gr., Hdc., N. D. Wd.—*J.N.*!
- Desmazierella acicola**, Lib. On dead leaves of *Pinus sylvestris*, Green Hurst, Cr. Dn., 1897—*J.N.* This most peculiar peziza appeared here in great abundance in the spring of 1897 on Scots-pine leaves, but not seen either before or since.
- Echinella setulosa**, Mass. & Crossl. Brit. Fung. Fl. W. p. 305. 1894. On dead stems of *Calluna Erica*, in quantity, Gibson Mill, Hdc.; Pck. Wd. and Mdgh.—*J.N.*! Lud. Dn., N. D. Wd. and Soil Hill!
- E. Crosslandi**, Mass., Brit. Fung. Fl., IV., p. 306. On decorticated wood, H. Gr., April 1894—*J.N.*!
- Erinella apala**, (B. & Br.) Mass. On decaying rush-stems, Brookhouse; Skirden; Cr. Dn., Hdc.—*J.N.*!
- E. Nylanderi**, Rehm. (*Lachnella sulphurea*, Pers.) On dead nettle stems, Pck. Wd.—*J.N.*!
- Dasyscypha virginea**, (Batsch.) Fckl. Very common on dead twigs, subherbaceous and herbaceous stems lying in moist shaded places.
- D. nivea**, (Hedw.) Not uncommon on dead, hard wood, especially upturned, weather-washed tree roots.
- D. acutipila**, (Karst.) On dead rush and grass stems in wet places, Pck. Wd., Mdgh., and Cr. Dn.—*J.N.* Dam-side, Rishworth, and in Mixenden Ings, 1900!
- D. Soppittii**, Mass. On dead oak-leaves, Pck. Wd. and Hdc.—*J.N.* Sun Wd., N. D. Wd., and Bn. Cl.—*Hx. Nat.*, V., p. 105.
- D. inquilina**, (Karst.) On *Equisetum sylvaticum*, Cr. Dn. First British record—*Nat.*, June 1901.
- D. crucifera**, (Phil.) Sacc. On dead holly-leaves; Brookhouse Ovenden, and Lightcliffe!
- D. bicolor**, (Bull.) Fckl. On bark, El. Pk. Wd., 1892!
- D. lætior**, (Karst.) On dead canes of wild raspberry, Mdgh., 1899. First British record—*Nat.*, Jan. 1904.
- D. patula**, (Pers.) On decaying oak-leaves, Pck. Wd. and El. Pk. Wd., 1894—*J.N.*!
- D. conformis**, (Cke.) On dead grass roots and stems, Hept.

- D. leuconica**, (Cke.) Mass. Frequent on dead wood and bark in moist and shaded places.
- D. candidata**, (Cke.) Mass. On dead *Rubus* stems, Lud. Dn.!
- D. ciliaris**, (Schrad.) On dead oak-leaves, Cr. Dn.—*J.N.*  
El. Pk. Wd., Sun. Wd. and Lud. Dn.!
- D. ascuna**, (Phil.) Mass. On dead *Carex pendula*, El. Pk. Wd.!
- D. acuum**, (A. & S.) Sacc. On fallen pine-needles, Cr. Dn.,  
Hdc.—*J.N.*! On dead holly-leaves, Shibden—*H.T.S.*
- D. aspidiicola**, (B. & Br.) Sacc. Common on the rachis of decaying ferns, mostly *A. Filix-mas*; occasionally on *Equisetum*.
- D. hyalina**, (Pers.) Mass. Common on decaying wood in moist places: grows in crowds.
- D. carinata**, (Cke. & Mass.) On rachis of dead fern, H.Gr.,  
April, 1893.—*J.N.* First record, *Grev.* xxi. p. 121.
- D. punctoidea**, (Karst.) On dead stems of willow herb,  
H.Gr.—*J.N.*; on sycamore leaf, El. Pk. Wd.!
- D. fugiens**, (Phil.) Common on dead rushes and sedges.
- D. calycina**, (Schum.) (*Peziza Wilkommii*, Hartig). The Larch Canker. Parasitic upon and very destructive to larch and Scots pine, H.Gr., Hdc., and Cr. Dn.—*J.N.*! On pine log, quarry-hill, Hove Edge!
- D. subtilissima**, (Cke.) On Scots-pine, H. Gr. and Cr. Dn.  
Closely related to *D. calycina* in appearance and habit.
- D. albo-testacea**, (Desm.) On grass, Salterhebble—*H.T.S.*!
- D. controversa**, (Cke.) On dead grass, Staups Cl.—*H.T.S.*
- D. palearum**, (Desm.) Mass. On dead grass, Staups Cl.—  
*H.T.S.* Cr. Dn.—*J.N.*! Quite distinct from *D. controversa*.
- D. fuscescens**, (Pers.) Sacc. (*Lachnea brunneola*, Gillet). On dead oak-leaves, Hdc. and H. Gr.—*J.N.*!
- D. calyculæformis**, (Schum.) On twig, Pck. Wd.—*J.N.*
- D. puberula**, (Lasch.) Mass. On dead oak-leaves, Mdgh. and  
H. Gr.—*J.N.* N. D. Wd. and El. Pk. Wd.—*H.T.S.*!
- D. Grevillei**, (Berk.) Phil. (*Mollisia Grevillei*, Berk.) On dead stem of some Umbellifer, Cr. Dn.—*Nat.*, June 1894.
- D. corticalis**, (Pers.) Mass. On dead bark, Cr. Dn., '94—*H.T.S.*
- D. papillaris**, (Bull.) On decaying wood, H. Gr., 1894—*J.N.*!
- D. Carmichaelii**, Mass. On dead wood, Shibden—*H.T.S.*
- D. dematicola**, (B. & Br.) On dead wood, Cr. Dn.
- D. Bullii**, (W.G.S.) Mass. On decaying tree, High Lee Cl.!
- D. elaphines**, (B. & Br.) Mass. On decorticated oak branch,  
Pck. Wd.—*J.N.*



## ASCOBOLACEÆ.

- Ascophanus microsporus**, (B. & Br.) Phil. On cow and horse droppings, El. Hall fields; fields in El. Pk. Wd. and in Lud. Dn.—*H.T.S.!*
- A. granuliformis**, (Crouan) Boud. On cow dung, Hdc.
- A. argenteus**, (Currey) Boud. On cow dung in fields, Copley and Shibden—*H.T.S.* Hdc., near the pavilion, 1899.
- A. ochraceus**, (Crouan) Boud. On soil, wall top, El. Hall, and El. Pk. Wds. On cow dung, Mdgh., Lud. Dn., and in field near the Derby, Booth Dean—*J.N.!*
- A. carneus**, (Pers.) Boud. Frequent on cow, horse, and rabbit dung, bare soil, road scrapings, old rope and healds, rotting castout hearthrug, damp paper, leather.  
Var. **cuniculi**, Boud. On rabbit dung, Cr. Dn.—*J.N.*
- A. equinus**, (Müll) Boud. (*A. pilosus*, Boud.) Very common on old horse-droppings.
- Ryparobius sexdecemsporus**, (Crouan) Heb. Bdg.—*J.N.*
- R. Cookei**, Boud. (*R. crustaceus*, Fckl.) On rabbit dung, Hdc. and Heb. Bdg.—*J.N.* On horse dung, Salterhebble, Shibden, Norland and Savile Park—*H.T.S.*
- R. argenteus**, B. and Br. On horse droppings, El. Pk. Wd.!
- R. Leveilleanus**, (Renny) Phil. On vole dung, Hdc. El. Pk. Wd., H. Gr., and Cr. Dn.—*H.T.S., J.N.*
- R. subhirsutus**, (Renny). On rabbit dung, Cr. Dn.—*J.N.*
- Ascobolus Crosslandi**, Boud., Bulletin de la Soc. Myc. de France. Salterhebble—*Nat.*, Jan. 1899, pp. 29-31, figs. 9-13.
- A. denudatus**, Fr. On decaying wood, fir needles, etc., Hdc. and Cob Clough, Ripponden—*J.N.!*
- A. vinosus**, Berk. On rabbit dung, Hdc. and Cr. Dn.—*J.N.*
- A. glaber**, Pers. On cow, rabbit, and horse dung in fields. Hdc., Heb. Bdg. and Cr. Dn.—*J.N.* Copley—*H.T.S.* El. Pk. Wd.; Coley; Pellon and Mixenden Ings!
- A. Leveillei**, Boud. On horse dung in market garden, Skircoat, in immense quantity—*H.T.S.* First British record—*Nat.*, Jan. 1899.
- A. minutus**, Boud. Near the lodge entrance to Hdc.—*J.N.!* First British record—*Nat.*, Jan. 1900.
- A. ærugineus**, Fr. On cow dung, Hdc., 1892—*J.N.!*
- A. stictoideus**, Speg. Skircoat. First British record—*Nat.*, Jan. 1900.
- A. furfuraceus**, Pers. Very common on cow dung in fields.



- A. Crouani**, Boud. On rotting wood, El. Pk. Wd., and in foundry yard, Heb. Bdg.—*J.N.!*
- A. viridis**, Currey. On the ground, Lee Mill, Hept., Mdgh.—*Nat.*, June 1894. Bn. Cl., Lud. Dn., and El. Pk. Wd.!
- A. atro-fuscus**, Phil. & Plow. On the ground, principally on road scrapings, El. Pk. Wd. bottom—*Nat.*, June 1894. Mdgh., Pck. Wd., and Bn. Cl.
- A. immersus**, Pers. On sheep dung, Warley Edge—*H.T.S.* On cow dung, Skircoat Moor, El. Pk.; Hdc., etc.—*J.N.!*
- A. brunneus**. On cow, rabbit, and horse dung, Lud. Dn. ! Hdc.—*J.N.* Shibden—*H.T.S.*

## DERMATEACEÆ.

- Cenangium dryinum**, (Cke.) Mass. On oak bark and wood, Blakedean Valley; Lud. Dn. ! Mdgh. and Dudwell.
- C. abietis**, (Pers.) Rehm. On pine log, Cr. Dn., 1903—*J.N.*
- Scleroderris rubi**, (Lib.) Mass. (*Dermatea*, Rehm.) On dead stems of dog-rose, Cr. Dn., 1894—*J.N.!*
- S. pseudoplatani**, (Phil.) On sycamore bark, Hdc.—*J.N.!*
- S. livida**, (B. & Br.) Mass. On pine bark and wood, Cr. Dn.

## BULGARIACEÆ.

- Bulgaria polymorpha**, (Æder) Wetts. (*B. inquinans*, Pers.) On dead trunk, Pck. Wd.; wood-yard, Heb. Bdg., and at Salterhebble; on fallen elm, and on oak log, Cr. Dn.—*J.N.!* Semi parasitic.
- Ombrophila clavus**, (A. & S.) Cke. Common in spring on twigs in water, or on dead herbaceous stems in wet places. Form and size very variable.
- O. brunnea**, Phil. Cr. Dn.—*Nat.*, June 1894.
- Orbilina coccinella**, (Somm.) Karst. (*Calloria*, Phil.) On wood, Hdc., 1894—*J.N.!*
- O. vinosa**, (A. & S.) Karst. (*Calloria*, Phil.) Frequent on dead wood and on bark; on old cloth hearth-rug, and old shoe-leather, Pck. Wd.—*J.N.!* on old rope, warehouse, Hx., and on twig, Dudwell—*H.T.S.!*
- O. flexuosa**, Crossl., Grev. xxii., p. 44, Dec. 1893. On decaying bark, Sun Wd. and N. D. Wd. !
- O. leucostigma**, Fr. On bark, El. Pk. Wd., pine bark, Hdc.—*J.N.!* Sun Wd. and Cr. Dn.—*Nat.*, June 1894; on dead wood, Shelf.
- O. auricolor**, (Blox.) Sacc. On wood, H. Gr. and Gibson Wood—*Nat.*, June 1894.
- O. luteo-rubella**, (Nyl.) Karst. On the inside of a sheet of decaying bark, Sun Wd.—*Nat.*, June 1894.

- Calloria fusarioides**, (Berk.) Fr. On nettle stems, Pck. Wd.  
**Coryne sarcoides**, (Jacq.) Tul. 1789. "Grows between the bark and the wood, on the stumps of oak trees, the first winter after their fall, and is pretty common about Hx."—*Bolton*, Tab. 101, f. 2. Still common and with exactly similar habit, but also on beech, ash, and other stumps. Is almost always the first fungus to appear.  
**C. urnalis**, (Nyl.) Sacc. (*Ombrophila purpurea*, Fckl. On stumps, Sun Wd.; H. Gr.; N. D. Wd., etc.! on acorns and on birch tree trunk, Pck. Wd.—*J.N.*

## PATELLARIACEÆ.

- Patinella macrospora**, Mass. On rotten wood, H. Gr. First record—*Grev.* xxii., p. 44. On old tub, Hdc.—*J.N.*  
**P. olivacea**, (Batsch.) Sacc. On dead logs, El. Pk. Wd. and Elland Hall Wood—*Nat.*, June 1894.  
**Patellea pallida**, (Berk.) Mass (*Patellaria*, Berk.) On dead thorn wood in swamp, H. Gr.—*Nat.*, June 1894. On alder root, Cr. Dn., 1899—*J.N.*!  
**Patellaria proxima**, B. & Br. On dead oak twig, Cr. Dn.  
**Durella melanochlora**, Rehm. On decorticated alder, Hept. First British record—*Nat.*, Jan. 1904.

## STICTIDACEÆ.

- Propolis faginea**, (Schrad.) Karst. (*P. versicolor*, Fr.) On decorticated branch, Catty Well Cl., 1891!  
**Nemacyclus niveus**, (Pers.) (*Schmitzonia nigra*, Phil.) On fallen pine-needles, Cr. Dn. 1894—*J.N.*!

## PHACIDIACEÆ.

- Phacidium multivalva**, (DC.) Fr. (*P. ilicis*, Tul.) Common on dead holly-leaves.  
**Trochila craterium**, (DC.) Fr. Common on dead ivy-leaves.  
**T. ilicis**, (Chev.) Crouan. (*Stegia ilicis*, Fr.) On dead holly-leaves. [Dn.  
**Rhytisma acerinum**, (Pers.) Fr. On sycamore leaves, Cr.  
**Coccomyces coronatus**, (Schum.) De N. (*Phacidium*, Fr.)  
 1785. "This pretty peziza adheres to decaying oak-leaves by its whole under side.....I saw it in abundance in North Dean, Dec."—*Bolton*, Tab. 109, f. 1.

## GYMNOASCACEÆ.

- Gymnoascus Reesii**, Baran. On old, rotting, cloth-tab hearth-rug, Pck. Wd.—*Hx. Nat.*, VI., p. 124.  
**Balocotricha grisea**, B. & Br. On old, rotting, cloth-tab hearth-rug, Pck. Wd.—*J.N.*! On bit of old carpet, El. Hall Wd.—*H.T.S.*

## PROTOMYCETACEÆ.

**Protomyces macrosporus**, Ung. On cow-parsnip, Pck. Wd.

## PHYCOMYCETES.

## MUCORACEÆ.

**Mucor mucedo**, L. "Grows on putrid fruits, etc."—*Bolton*, Tab. 132, f. 1. On various decaying substances. Var. **caninus**, Hipperholme, Salterhebble, Heb. Bdg.—*H.T.S.*

**M. stercoreus**, Link. El. Pk. Wd.—*H.T.S.*

**M. amethysteus**, Berk. Hx., on foreign tomatoes—*H.T.S.*

**M. tenerrimus**, Berk. On dead twig, El. Pk. Wd.—*Nat.*,

**Circinella simplex**, Van Tiegh. Copley—*H.T.S.* [June '94.

**Spinellus fusiger**, Van Tiegh. On decaying toadstool (*Mycena*), Hdc., 1897—*J.N.*!

**Rhizopus nigricans**, Ehr. On decaying leaves, Lud. Dn.; on decaying turnip, Clover Hill—*H.T.S.*!

**Phycomyces nitens**, Kze. On maturing saddle of mutton, Hx.; on greasy soil, foundry, Heb. Bdg.—*Nat.*, June 1894; on grease in warehouse, Hx.—*H.T.S.*; from the pore of a cocoanut in damp cellar, Hx., 1899—*J. W. Egerton.*!

**Sporodinia aspergillus**, Schröt. (*Syzygites megalocarpus*, Ehr.) On both living and dead toadstools, El. Pk. Wd.—*H.T.S.*

**Thamnidium elegans**, Link. Norland; El. Pk. Wd. and Brighthouse—*H.T.S.*!

**Pilaria anomala**. Schrad. On hen and rabbit dung, Skircoat; N. D. Wd. and Hdc.—*H.T.S.*, *J.N.*

**Pilobolus crystallinus**, Tode. "On horse and cow dung, Hx."—*Bolton*, Tab. 133, f. 1. Very common.

**P. roridus**, Pers. "On dung, Hx."—*Bolton*, Tab. 132, f. 4. On rabbit dung, Walshaw; horse dung, El. Pk. Wd.

**P. Œdipus**, Mont. Dudwell, 1898—*H.T.S.*

**Chætocladium Jonesii**, Fres. On rabbit dung, Hdc.—*J.N.*!

## ENTOMOPHTHORACEÆ.

**Empusa muscæ**, Cohn. Common on dead house-flies (*Musca domestica*) and other dipterous insects, Aug. and Sept.

## CHYTRIDIACEÆ.

**Synchytrium anemones**, Woronin. On wood anemone, H. Gr.—*J.N.*!

**S. mercurialis**, Fckl. On leaves and peduncles of living dogs' mercury, El. Pk. Wd., Hdc., & Cr. Va.

**S. taraxaci**, De By. On living dandelion leaves, Cr. Dn.—*J.N.* El. Pk. Wd.—*J.T.A.* Cr. Va.!

## SAPROLEGNIACEÆ.

**Pythium De-Baryanum**, Hesse. On cultivated cress seedlings, Clover Hill—*H.T.S.*

## CYSTOPODACEÆ.

**Cystopus candidus**, Lév. On shepherds' purse, Elland, 1890—*M. Buckley!*

## PERONOSPORACEÆ.

**Phytophthora infestans**, De By. Potato disease.

**Plasmopara nivea**, Schröt. On leaves of beaked parsley, Mdgh., 1892—*H.T.S., J.N.*

**Peronospora parasitica**, De By. On shepherds' purse, Heb. Bdg., 1892—*J.N.!*

**P. trifoliorum**, De By. On white clover, Cr. Dn., '94—*J.N.*

**P. Schleideni**, Ung. On garlic, El. Pk. Wd.—*H.T.S.!*

## DEUTEROMYCETES.

## SPHÆRIOIDACEÆ.

**Phoma asteriscus**, Berk. On dead stems cow-parsnip, Cr. Dn.

**P. caulographa**, Dur. et Mont. On dead stems of *Charophyllum temulum*, canal bank near Elland, Jan. 1898. First British record—*Nat.*, Jan. 1904.

**P. lingum**, Desm. On decaying cabbage-stalks, Copley, Dudwell, Clover Hill—*H.T.S.!*

**P. samarorum**, Desm. Common on decaying ash-fruits.

**P. exiguum**, Desm. On elder twig, Ainley Wd., El.—*H.T.S.*

**P. nebulosum**, Berk. On dead willow-herb (*Epilobium hirsutum*), Lee Mill Rd., Heb. Bdg.—*J.N.!*

**P. projecta**, Cke. In erumpent pustules on decaying grass stems in swamp, Hdc., Apr. 1894—*J.N.*

**P. longissimum**, Berk. Common on dead stems of umbelliferous plants as cow-parsnip, sweet cicely, chervil.

**P. glandicola**, Lév. On the husks of germinating acorns, Pck. Wd. and Hdc.—*J.N.!*

**Diplodia herbarum**, Lév. On nettle stems, Pck. Wd.; cocks'-foot grass, Salterhebble, and Sun Wd.; cabbage stalk, Coley! [Cr. Dn.—*J.N.!*

**Hendersonia mutabilis**, B. & Br. On dead sycamore-twig, **Dilophospora albida**, Mass. & Crossl., *Nat.*, Jan. 1904. On dead stems of *Epilobium hirsutum*, Heb. Bdg., 1890—*J.N.*

**D. graminis**, Desm. On grass leaves, Cr. Dn. and Pck Wd.

**Vermicularia atramentaria**, B. & Br. On rotting potato haulms near El. Pk. Wd., Apr. 1898—*H.T.S.!*

**Placosphæria corrugata**, Karst. On husks of germinating acorn, Pck. Wd.—*J.N.!*

## LEPTOSTROMACEÆ.

- Leptostroma spireæ**, Fr. On meadow sweet, H. Gr.—*J.N.*  
**Leptostromella juncina**, Sacc. On *Juncus* stem, Hdc.

## EXCIPULACEÆ.

- Dinemasporium graminum**, Lév. On grass leaves, Pck. Wd.—*J.N.* Dudwell, Hx.—*H.T.S.* El. Pk. Wd., etc. !  
 Var. **herbarum**, Cke. On nettle and other herbaceous stems, Mytholmroyd, Mdgh., and Pck. Wd.—*J.N.* ; on dead bracken and broom, Lud. Dn. ; on wood, Shibden—*H.T.S.* !

**D. abjectum**, Fckl. On speedwell leaves, Cr. Dn.—*J.N.* !

**Pilidium acerinum**, Kze. Common on dead sycamore leaves.

## MELANCONIACEÆ.

- Libertella fusispora**, Mass. & Crossl. On rotting, cloth-tab hearthrug, Pck. Wd., Mar. 1897. First record.

## HYPHOMYCETES.

## MUCEDINACEÆ.

- Chromosporium aureum**, Sacc. On castout hearth-rug, Pck. Wd., Mar. 1897—*J.N.* ! First British record.  
**Oospora coccinia**, (Corda) Sacc. In warehouse, Hx.—*H.T.S.* First British record—*Nat.*, Jan. 1900.  
**O. crustacea**, Sacc. On castout hearth-rug, Pck. Wd.—*J.N.* !  
**Fusidium viride**, Grove. On old petioles of butterbur, El. Pk. Wd., 1898—*H.T.S.* !  
**Monilia cæspitosa**, (Huds.) Purton (*Mucor racemosa*, Pers.) Halifax, on putrid vegetables—*Bolton*, Tab. 132, f. 2.  
**Cylindrium Cordæ**, Sacc. On dead oak-leaves, H. Gr.—*J.N.*  
**C. flavo-virens**, Bon. In little pale, greenish-yellow patches on fallen oak-leaves, El. Pk. Wd., 1900—*J. T. Jolley.*  
**Oidium leuconicum**, Desm. On cultivated rose tree, Oven-den, 1892—*A. Wilson.* The conidial condition of *Sphærotheca pannosa.*  
**O. monilioides**, Link. On living stems and leaves of grass, El. Pk. Wd. and H. Gr.—*J.N.* ! The conidial condition of *Erysiphe graminis.*  
**Botryosporium pulchrum**, Corda. On dead herbaceous stem in garden, Clover Hill, Hx., 1898—*H.T.S.* !  
**Trichoderma lignorum**, (Tode.) Harz. (*T. viride*, Pers.) Common on the surface of cut wood. The conidial condition of *Hypocrea rufa.* [ful.]  
 [ **Aspergillus nigricans**, Cke. Hx.—*Nat.*, June 1894. Doubt-  
**Aspergillus glaucus**, Link. On dead grass, Heb. Bdg., 1892—*J.N.* The conidial condition of *Eurotium herbariorum.*

- A. virens**, Link. On decaying leaves, El. Pk. Wd., 1892!
- A. candidus**, Link. On dead agaric, and on slime fungus (*Arcyria cinerea*), N. D. Wd., 1900! [H.T.S.]
- A. flavus**, Link. On decaying wood-work, warehouse, Hx.—
- Penicillium glaucum**, Link. Very common on almost all kinds of damp or decaying organic substances, indoors or out; even found forming a felt on the surface of liquid in a dye vat. It is the fungus which imparts a pale blue-green colouration to household provisions, neglected or kept in too damp or close a place. Its conidia are ever present in the atmosphere in more or less quantity.
- More properly belonging, with *Aspergillus*, to the *Perisporiaceæ* division of *Ascomycetes*, as both are known to produce ascophores occasionally under favourable conditions.
- P. bicolor**, Fr. On the husks of germinating acorn, El. Pk. Wd., Nov. 1894—*J.T.A.*
- P. candidum**, Link. On rotting, wicker skip, Pck. Wd.—*J.N.*  
Not uncommon in woods on decaying leaves, fungi, etc.
- Acremonium alternatum**, Link. On dead leaves, Cwl. Wd., '92!
- A. verticillatum**, Link. On dead stump, Elland—*H.T.S.!*
- Rhizotrichum repens**, Preuss. On dead stump, Fixby!
- Sporotrichum læticolor**, Cke. & Mass. On the bark of a decaying stump, Catty Well Cl.—*J.T.A.!* First record—*Grev.*, xx., p. 33, 1891. [cellars.]
- S. sulphureum**, Grev. On old baskets, corks, etc., in damp
- S. chlorinum**, Link. On damp wood, El. Pk. Wd.—*Nat.*, June 1894.
- Botrytis virella**, Fr. On dead furze, Skircoat Moor, Nov. 1897—*H.T.S.*; on damp wood, N. D. Wd.—*H.T.S.!*
- B. vulgaris**, Fr. Common on a great variety of decaying vegetation in woods, gardens, greenhouses, etc.
- Var. **plebeja**, Fres. On decaying oak cotyledon, Pck. Wd.—*J.N.*
- B. cana**, Kze. & Schum. On sycamore bark, Sun Wd.!
- B. vera**, (Berk.) Fr. Hx., on *Polyporus versicolor*—*Bolton*, Tab. 132, f. 3. (*Mucor botrytis*).
- B. cinerea**, Pers. On decaying leaves, stems, fungi, etc.—*J.N.!*
- Var. **sclerotiophila**, Sacc. Growing from sclerotia formed on decaying herbaceous stems, leaves, etc., in woods: H. Gr., Mdgh., Cr. Dn., El. Pk., etc.



- B. fascicularis**, (Corda) Sacc. Common on decaying vegetation. *Inter alia* it has been found on lenticel scars of mountain ash, hips of wild rose, haws, acorns, pine leaves, herbaceous stems, and leaves of *Crocus nudiflorus*, etc.
- Ovularia obliqua**, Oud. Common on living, fading leaves of cow dock, also on sweet dock. Said to be the conidial stage of *Sphærella rumicis*.
- Sepedonium chrysospermum**, Fr. Common on spp. of *Boletus*. The conidial condition of *Hypomyces chrysospermus*.
- Verticillium lateritium**, Berk. On decaying butterbur, Elland—*H.T.S.*!
- Cephalothecium candidum**, Bon. Erringden!
- Trichothecium roseum**, Link. On various decaying substances, as leaves, fruit, paper, cheese, rope, etc.
- T. candidum**, Wallr. On rotting, wicker skip, Pck. Wd.
- T. obovatum**, (Berk.) Sacc. On old wicker basket in damp warehouse, and lid in garden, Clover Hill—*H.T.S.*!
- Bostrichonema alpestre**, Ces. On living leaves of sweet dock (*Polygonum Bistorta*), Hdc.—*H.T.S.*, *J.N.*
- Arthrobotrys rosea**, Mass. On rotting twigs, Pck. Wd.—*J.N.*
- Dactylium dendroides**, Fr. On dead Polypore, Cwl. Wd.

## DEMATIACEÆ.

- Torula herbarum**, Link. Common on dead herbaceous stems.
- T. graminis**, Desm. On decaying grass, Pck. Wd.—*J.N.*!
- Stachybotrys dichroa**, Grove. On decaying stems of *Epilobium hirsutum*, Lee Mill Rd., Heb. Bdg., 1900—*J.N.*
- Periconia byssoides**, Pers. On stems with *S. dichroa*.
- Monotospora sphærocephala**, B. & Br. On old bone, Dudwell, Dec. 1897; on elder bark, El. Pk. Wd.—*H.T.S.*!
- M. pumila**, Sacc. Parasitic on another micro-fungus (*Graphium flexuosum*), Heb. Bdg. and Stanelly Cl.—*H.T.S.*, *J.N.*
- M. megalospora**, B. & Br. On rotten wood, N. D. Wd.!
- Stachylidium cyclosporum**, Grove. On dead bramble, Walter Cl.; on wood and *Carex*, El. Pk. Wd.; on dead dock, Salterhebble.
- S. extorre**, Sacc. On decaying butterbur, El. Pk. Wd.!
- Bispora monilioides**, Corda. On the sawn surface of tree stump, Fixby Park, with the ascigerous stage—*A. Clarke*; El. Pk. Wd. and Cwl. Wd.—*H.T.S.*!
- Polythrinchium trifolii**, Kze. On living leaves of white clover, Mdgh.—*Nat.*, June 1894. Cr. Dn.—*J.N.*!
- Cladosporium epiphyllum**, Mart. On sycamore leaf, Pck. Wd.



- C. herbarum.** On dead herbaceous stems, N. D. Wd. and El. Pk. Wd.; on grass, pea swads, and paper, Pck. Wd.; on wood, Cr. Dn.—*J.N.* On fungi, etc.!
- Helminthosporium apiculatum,** Corda. On decaying grass, Mdgh.—*Nat.*, June 1894.
- H. folliculatum,** Corda. On dead stems of cow parsnip, Hdc.—*J.N.* On dead cabbage-stalks, Dudwell—*H.T.S.*!
- H. rhopaloides,** Fres. On decaying cabbage-stalks, Copley; nettle, Cr. Dn.; willow-herb, Heb. Bdg.; thistle, Walter Cl.
- Brachysporium stemphyloides,** Sacc. Heb. Bdg.—*J.N.*
- B. oosporum,** (Corda). El. Pk. Wd.—*Nat.*, June '94. Cr. Dn.
- B. obovatum,** (Berk.) H. Gr.—*Nat.*, June 1894. In smutty patches, on wood El. Pk. Wd.; on orange peel, Cr. Va.—*J. H. Bolton.*
- B. tingens,** (Cke.) Sacc. On wood, El. Pk. Wd.—*H.T.S.*!
- Heterosporium epimyces,** Cke. & Mass. On dead, fleshy fungi, Lud. Dn.—*H.T.S.*! [*J.N.*]
- Coniothecium effusum,** Corda. On bark and wood, Cr. Dn.—
- C. conglutinatum,** Corda. In black, powdery streaks on fallen sycamore-leaves, Hdc.—*Nat.*, June 1894.
- Macrosporium tomato,** Cke. On growing tomatoes, Heath!

## STILBACEÆ.

- Stilbum tomentosum,** Schrad. Parasitic on spp. of *Trichia*, Hdc., 1892—*J.N.*! El. Pk. Wd.—*H.T.S.*!
- S. vulgare,** Tode. On decaying oak twig, Cr. Dn.—*J.N.*
- S. pellucidum,** Schrad. On another fungus (*Tubercularia*), Hawden-hole, Heb. Bdg., 1899—*J.N.*!
- S. fasciculatum,** B. & Br. On decaying twigs, Cr. Dn.—*J.N.*
- S. fimetarium,** B. & Br. Common on rabbit dung. On vole dung, stream side, Turner Wd.!
- Isaria farinosa,** Fr. On dead putrescent pupæ of various insects, in fields and woods, Pck. Wd., El. Pk. Wd., etc. The conidial stage of *Cordyceps militaris*.
- I. arachnophila,** Ditm. On a dead spider, El. Pk. Wd.!
- I. felina,** Fr. Dudwell—*H.T.S.*!
- I. sulphurea,** Friedl. On vole dung, Hdc. and H. Gr.—*J.N.*
- I. brachiata,** Schum. On putrescent fungi, Hdc.; Lud. Dn.—
- I. citrina,** Pers. On a *Mycena*, El. Hall Wd.—*H.T.S.*! [*J.N.*!]
- Graphium stilboideum,** Corda. On fallen branches, Cr. Dn.
- G. flexuosum,** (Mass.) Sacc. On rotting twigs and wood, Cr. Dn., and El. Pk. Wd.—*Nat.*, June 1894. Stanelly Cl.

**G. rhizomorphorum**, Mort. Parasitic on the mycelium of *Armillaria mellea*, H. Gr., '94—*J.N.* First British record.

**Stysanus stemonites**, Corda. On tree stump, Brookhouse, Ovenden, 1892! on bramble, N. D. Wd.; on wood, Hx.—*J. H. Bolton.*

#### TUBERCULARIACEÆ.

**Tubercularia vulgaris**, Tode. Very common on felled trees and their branches if left in the wood a month or two; beech appears to be less able to resist its entrance than are those with a thick, rugged bark. The conidial stage of *Nectrea cinnabarina*.

**Illosporium roseum**, Mart. Growing on the thallus of the lichen *Parmelia saxatilis*, Pck. Wd.—*J.N.*

**I. carneum**, Fr. On the lichen *Peltigera canina*, near Stump Cross—*H.T.S.*

**Ægerita candida**, Pers. Frequent on wet, rotting wood and bark: Sun Wd., El. Pk. Wd., Hdc., High Lee Cl., etc.

**Hymenula herbarum**. On decaying dock leaves, Pck. Wd., 1894—*J.N.*! First British record.

**Volutella ciliata**, Fr. On various decaying substances: potato haulms, Tag-lock; bone, Nut Cl., Heb. Bdg.; alder bark, Salterhebble; butterbur, Bn. Cl.

**V. setosa**, Berk. On dead twigs, El. and Hdc.! decaying ferns, Hdc.; bean stalks, Copley—*J.N.*, *H.T.S.*

**Fusarium lateritium**, Nees. On broom, Lud. Dn.! [*J.N.*!]

**F. roseum**, Link. El. Pk. Wd.—*Nat.*, June 1894; Cr. Dn.—

**F. brassicæ**, Thüm. On rotting cabbage stalks, Copley.

**F. Cordæ**, Mass. On herb. stems, garden, Skircoat—*H.T.S.*

**F. solani**, Sacc. On dead potato haulms, Shelf!

[**F. georgina**, Berk.—*Nat.*, June 1894, on decaying dahlia tubers, Belle Vue, Hx. '92, is possibly a form of *F. betæ*.]

**Pionnotes uda**, Sacc. On decaying thistle, Ovenden, 1892! and on elder shoot, El. Pk. Wd.—*Nat.*, June 1894.

**Epicoccum vulgare**, Corda. On decaying thistle (*Cnicus palustris*), Bn. Cl.—*H.T.S.*!

**E. diversisporum**, Preuss. On rotting paper, Pck. Wd.—*J.N.*!

**E. herbarum**, Corda. On decaying barley, Park Nook, Nov. 1895, and fox glove stems, N. D. Wd., Aug. '98—*H.T.S.*!

**E. purpurascens**, Ehrb. On dead herb. stems, Heath, 1896!

#### MYXOMYCETES.

##### PHYSARACEÆ.

**Badhamia macrocarpa**, Rost. On wood, foundry yard, Heb. Bdg.—*J.N.*; rubbish heap, warehouse yard, Hx.—*H.T.S.*

- Tilmadoche nutans**, (Pers.) Rost. (*Physarum nutans*, Pers.)  
Common on moist dead wood not too far gone.
- T. mutabilis**, Rost. (*Physarum viride*, Pers.) Lee Wood—*J.N.*
- Physarum leucophæum**, Fr. (*P. nutans*, var. *leucophæum*,  
Lister, Myc.) On decaying wood in stack-garth, Hoyle  
House, Lightcliffe, 1892!
- P. sinuosum**, (Bull.) Rost. (*P. bivalve*, Pers.) On dead leaves,  
Mdgh., 1892—*J.N.*
- Fuligo varians**, Somm. (*F. septica*, Gmel.) Flowers-of-tan.  
“Woodhouse Wood near Hx., 1782”—*Bolton*, Tab. 134.  
Common on rotten wood, tan, etc. Records many.
- Craterium confusum**, Mass. (*C. pedunculatum*, Trent.) On  
dead leaves, bark, etc., also swarms on to living plants,  
H. Gr., Cr. Dn., Mdgh., El. Pk. Wd.—*J.N.*!
- C. leucocephalum**, (Pers.) Ditm. On leaves, El. Pk. Wd.!
- Leocarpus fragilis**, (Dicks.) Rost. (*L. vernicosus*, Link). “On  
an Hair Grass, Hx.”—*Bolton*, unpublished Tab. 212,  
Brit. Mus. (Nat. Hist.) Collection. Almost always  
swarms up grass, and other stems, twigs, etc., Sun Wd.,  
Ca. Wd., Cr. Va., H. Gr., Pck. Wd., etc.—*J.N.*!!
- Chondrioderma difforme**, (Pers.) Rost. (*Didymium difforme*,  
Duby.) El. Hall Wd.; Shibden; Pck. Wd.
- Diachæa leucopoda**, (Bull.) Rost. (*D. elegans*, Fr.) On leaves  
of grass, etc, Pck. Wd., 1894—*J.N.*

## DIDYMIACEÆ.

- Didymium farinaceum**, Schrad. Common on bark, leaves,  
wood, etc., in moist shady places.
- D. squamulosum**, Fr. Common on dead leaves, chiefly  
sycamore, El. Pk. Wd.; Bn. Cl.; Cr. Dn., Hdc., etc.  
Var. **costatum**, Mass. Upper Goat House Cl., Rishworth!  
Var. **virgineum**, Mass. El. Pk. Wd.; Pck. Wd.
- D. Tussilaginis**, Mass. On living leaves of colts' foot, Mdgh.  
and Cat-holes Cl.—*J.N.*!

## STEMONITACEÆ.

- Stemonitis fusca**, Roth. Not uncommon on rotting wood,  
Bn. Cl.—*C. E. Moss*. N. D. Wd. ! Hdc., and Pck. Wd.
- S. ferruginea**, Ehr. “Grows in the hollows of old decaying  
stocks and roots of trees about Hx., 1789”—*Bolton*,  
Tab. 93, f. 1.
- S. Friesiana**, De By. (*Comatricha obtusata*, Preuss.) Common  
on moist dead wood. Records many.
- Enerthenema elegans**, Bowm. On wood, El. Pk. Wd.!

- Lamproderma physaroides**, Rost. On decaying, moss-covered branches, Hdc., Cr. Dn., and Pck. Wd.—*J.N.*!  
**L. violaceum**, (Fr.) Heb. Bdg., 1891—*J.N.*

## HETERODERMACEÆ.

- Cribraria aurantiaca**, Schrad. Among decaying grass and bracken, Sun Wd.—*Nat.*, June 1894. Cr. Dn., Mdgh.

## TUBULINACEÆ.

- Tubulina minima**, Mass. (*Licea minima*, Fr.) On dead leaves, Hdc.—*J.N.*

## RETICULARIACEÆ.

- Reticularia Lycoperdon**, Bull. “On old beam over the pan in a brew-house in Hx., Ap. 1788”—*Bolton*, Tab. 133, f. 2. Frequent on dead tree trunks and logs.

## TRICHIACEÆ.

- Trichia Carlyleana**, Mass. Among moss on wood, El. Pk. Wd.; Stanely Cl.—*H.T.S.*!

- T. fragilis**, Rost. (*T. Botrytis*, Pers.) “On moist, putrid wood in damp places, Hx.”—*Bolton*, Tab. 93, f. 2. On rotting wood, dead leaves, fern stems, etc., El. Pk. Wd., Cr. Dn.; Hudson Cl.—*J.N.*!

Forma **genuina**. On decaying ferns, Hdc.—*J.N.*

Forma **lateritia**. On decaying leaves, Heb. Bdg.—*J.N.*!

Forma **serotina**. On decaying ferns, Hdc.—*H.T.S.*

- T. varia**, Rost. Common on dead wood, bark and moss.

Forma **nigripes**. El. Pk. Wd.!

Forma **genuina**. On stump, Brookhouse, Ovenden!

- T. chrysosperma**, (Bull.) DC. (*T. favoginea*, Pers.)

1789. Halifax—*Bolton*, Tab. 94, f. 3. On moist decaying tree stumps, Well Head, Hx.; El. Pk. Wd.; N. D. Wd.—*H.T.S.*! Heb. Bdg.—*J.N.*

- T. affinis**, De By. On leaves and moss, Sun Wd.; on rotting wood, El. Pk. Wd.; N. D. Wd.—*H.T.S.*!

## ARCYRIACEÆ.

- Arcyria punicea**, Pers. Halifax, 1789—*Bolton*, Tab. 93, f. 3. Common on rotting wood among moss, leaves, etc. Often recorded.

- A. ferruginea**, Sauter. Green Hurst, Cr. Dn., 1897—*J.N.*

- A. incarnata**, Pers. On rotten trunk, Sun Wd.; N. D. Wd.!  
Mdgh., etc.—*J.N.* El. Pk. Wd.—*H.T.S.* [Mill.]

- A. nutans**, (Bull.) Grev. (*A. flava*, Pers.) On stump, Sterne

- A. cinerea**, (Bull.) Schum (*A. albida*, Pers.) On decaying log, Sterne Mill; Lud. Dn.; N. D. Wd.; Cr. Dn.

- A. rubiformis**, (Pers.) Mass. (*Hemitrichia rubiformis*, Lister).  
On decaying birch, H. Gr., 1894—*H.T.S.*, *J.N.*
- Perichæna depressa**, Lib. On decaying wood, El. Pk. Wd.;  
Skircoat—*Nat.*, June 1894. Sun Wd., Hoyle House, etc!
- P. corticalis**, (Batsch.) Rost. (*P. populina*, Fr.) On decaying  
stumps, El. Pk. Wd.; Cwl. Wd.; Salterhebble;  
Stanely Cl.; Sun Wd.; Shibden—*H.T.S.*!

## LYCOGALACEÆ.

- Lycogala Epidendrum**, Rost. (*L. miniatum*, Pers.)  
1789. "Grows in woods about Halifax"—*Bolton*, Tab. 119,  
f. 1. On dead stumps, Ovenden; Hdc.; Pck. Wd.;  
Mdgh., etc.—*J.N.*!

## Additions.

The following species are additions to the list of fungi, with the exception of three which having been already mentioned, are not again printed in heavy type.

## AGARICACEÆ.

- Tricholoma portentosum**, Fr. Horsehold Scout and Hdc.—
- Clitocybe tuba**, Fr. On dead leaves, Fixby. [*J.N.*!]
- C. INFUNDIBULIFORMIS** (p. 245). H. Gr. & Long Wd., Skircoat.
- COLLYBIA CLAVUS**, (L.) (p. 246). On twig, Pck. Wd.—*J.N.*!
- MYCENA ACICULA**, (Schæff.) (p. 247). Hx.—*Bolton*, Tab. 39, f. B.
- Omphalia cæspitosa**, (Bolt.) "Grows from the perpendicular sides of the pits where peat has been dug"—*Bolton*, Tab. 41 C. This species is generally considered as *O. oniscus*, but Dr. Cooke differs from this opinion; in his Handbook to Illustrations, p. 94, he remarks, "This species has been confounded with *O. oniscus* both in the Handbook (ed. I.) and by Fries himself. It is exactly the plant figured in the English edition of Bolton, but the German reprint is coloured very differently.
- O. demissa**, Fr. On moss, H. Gr., 1893—*J.N.*!
- Entoloma costatum**, Fr. Heb. Bdg.; El.; N.D.Wd.—*J.N.*!
- Naucoria tabacina**, (DC.) Fr. Pasture, Cr. Dn.—*J.N.*
- Coprinus aquatilis**, Peck. 1900. In swamp among decaying wood-rush leaves, twigs, moss, etc., High Lee Cl., Norland. First European record—*Nat.*, Jan. 1904.
- Gomphidius gracilis**, Berk. H. Gr.—*J.N.*

## POLYPORACEÆ.

- Polyporus armeniacus**, Berk. On wood, Hdc.—*J.N.*
- Fomes roseus**, Fr. On wood-work in cellar, Hx.—*U.B.*

## CLAVARIACEÆ.

**Clavaria tenerrima**, Mass. & Crossl. Hx.—*Nat.*, Jan. 1904.

## PERISPORIACEÆ.

**Perisporium funiculatum**, Preuss. On flax backing of cast-out hearth-rug, Pck. Wd., 1897—*J.N.*

## SPHÆRIACEÆ.

**Pleospora patamera**, Karst. On grass stems, Copley.

**Melanomma collabens**, (Currey). On twig, Pck. Wd.

## PEZIZACEÆ.

**Lachnea albo-spadicea**, (Grev.) On the ground, Lud. Dn.!

## SPHÆRIOIDACEÆ.

**Diplodia Tiliai**, Fr. On bark, H. Gr.—*J.N.* [Wd.!

**Vermicularia dematium**, Fr. On dead herb. stems, El. Pk.

## TUBERCULARIACEÆ.

**Epicoccum neglectum**, Desm. On dead thistle, Cr. Dn.

# APPENDIX.

## I. Excluded Aliens.

**S**UCH alien species as are not admitted into the London Catalogue, but have occurred casually in the district, were omitted from the body of the Flora and are now brought together. Ten years ago they were more common than now, and one or two localities where they were to be found every season have ceased to be productive, as they no longer serve the purpose of tips. Most of the aliens have occurred either on woollen waste as at Dapper Mill and Box Trees Mill, both in Wheatley valley (collected by Mr. J. T. Aspin principally); on corn screenings at Sterne Mill (now no longer a corn mill); or about the malt-kilns and corn mills on the canal side at Elland. In each case the species has been named by the authorities at Kew, to whom our thanks are tendered, and in many cases a specimen is in existence.

### RANUNCULACEÆ.

*Ceratocephalus orthoceras*, DC. 1890, Box Trees Mill, Wheatley.

### CRUCIFERÆ.

*Arabis verna*, R.Br. 1895, Wheatley.

*Sisymbrium orientale*, L. 1894, Elland; 1896, Sterne Mill.

*S. austriacum*, Jacq. 1894, Wheatley.

*S. altissimum*, Jacq. 1895, Sterne Mill.

*Lepidium perfoliatum*, L. Wheatley, Sterne Mill, Elland.

*Tetracme quadricornis*, Bunge. 1890, Box Trees, Wheatley.

### CARYOPHYLLÆ.

*Silene ccnoides*, L. 1896, Elland—*J. Mitchell*.

*Arenaria stellarioides*, Willd. 1895, Elland.

### LEGUMINOSÆ.

*Trigonella polycerata*, L. 1893, Wheatley.

*T. monantha*, C. A. Mey. 1895, Sterne Mill.

*T. corniculata*, L. 1897, Elland—*J. Firth*.

*Pocockia radiata*, Trantr. 1893, Wheatley.

*Coronilla varia*, L. 1896, Elland.

*Medicago Gevardi*, Waldst. and Kit. 1893, Wheatley.

*Trifolium angustifolium*, L. 1895, Dapper Mill, Wheatley.

*Vicia narbonensis*, L. 1895, Elland.

*V. atropurpurea*, Desf. 1903, Elland.

*Lathyrus setifolius*, L. 1896, Elland (?).



## COMPOSITÆ.

- Hemizonia Fitchii*, Gray. 1895, Sterne Mill.  
*Madia glomerata*, Hook. 1895, Elland.—*J. Mitchell*.  
*Artemisia scoparium*, Walds. & Kit. 1890, Box Trees Mill,  
 Wheatley.  
*Consinia tenella*, Fisch. & Mey. 1890-93, Box Trees Mill.  
*Centaurea hyalolepis*, Boiss. 1893, Wheatley.  
*Rhagadiolus stellatus*, Gærtn. 1895, Elland (?)—*J. Firth*.

## ERICACEÆ.

- Pernettya mucronata*, Gaudich. 1903, A small bush established  
 in a rough heathy field in Crimsworth Dean. Probably  
 bird-sown from some shrubbery.

## PLUMBAGINEÆ.

- Statice spicata*, Willd. 1893, Dapper Mill, Wheatley.  
*S. leptostachys*, Boiss. 1890, Box Trees Mill, Wheatley.

## POLEMONIACEÆ.

- Gilia achillæfolia*, Benth. 1896, Wheatley.

## BORAGINEÆ.

- Echinosperrnum Lappula*, Lehm. 1895, Sterne Mill, and Elland.  
*Amsinkia angustifolia*, Lehm. 1894, Sterne Mill, Tag Lock.  
*A. lycopsoides*, Lehm. 1895, Sterne Mill.  
*Arnebia echioides*, DC. 1895, Sterne Mill.

## SCROPHULARINEÆ.

- Veronica digitata*, Vahl. 1894, Tag Lock.

## LABIATÆ.

- Salvia verticillata*, L. 1895, Elland.

## PLANTAGINEÆ.

- Plantago tenuiflora*, Waldst. 1890, Box Trees Mill, Wheatley.

## CHENOPODIACEÆ.

- Chenopodium Botrys*, L. 1890, Box Trees Mill.

## GRAMINEÆ.

- Agropyron cristatum*. Boiss. 1895, Wheatley.

## II. Additions and Corrections.

Additional species and varieties (except aliens) are printed in heavy type. In the case of species already mentioned in the Flora, the names are in small capitals and the page is quoted.

### PHANEROGAMIA.

- Delphinium Ajacis*, Reichb. Casual. 1903, Elland.
- Berberis vulgaris** L.—82. Denizen. In an old hedge, top of Hawks Clough, Mytholmroyd.—*W. H. Cooke*.
- NASTURTIUM AMPHIBIUM (p.6). 1897, Calder side, Elland.
- Alyssum incanum*, L. Casual. Field corner, canal, Copley.
- Coronopus didymus*, Sm.—45 } Both infrequent casuals, or per-  
*C. Ruellii*, All—81 } haps colonists in market gardens.
- LEPIDIUM CAMPESTRE (p. 10). Not more than a Colonist.
- Silene nutans*, L.—16. Casual. 1896, Elland—*J. Mitchell*.
- Linum angustifolium*, Huds.—36. Casual. 1900, Canal bank, Salterhebble.
- Erodium moschatum*, L'Hérit.—11. Casual. Shaw Syke, &c.
- ACER CAMPESTRE, L. (p. 25). Broadbottom, Wadsworth and Dale Clough, Stansfield (700ft.) are two further stations to the west.
- ULEX EUROPEUS (p. 24). Not common even on the less elevated moors.
- TRIFOLIUM MEDIUM (p. 27). Frequent, rather than "Infrequent."
- T. resupinatum*, L. Casual. 1903, Elland.
- AGRIMONIA EUPATORIA (p. 37). 1903, Shibden.
- EPILOBIUM ANGUSTIFOLIUM (p. 43). Hanroyd Bank Wood, Midgley—*C. Crossland*.
- E. ROSEUM (p. 44). Rather, a Colonist in or near market gardens.
- CAUCALIS ANTHRISCUS (p. 50). Hippings Clough, Hebden Bridge.
- C. NODOSA (p. 50). Not more than a Colonist.
- [**Cornus suecica**, L.—15. A specimen from Halifax, along with *Rubus Chamæmorus* and *Trientalis*, all contributed by Beaumont, is preserved in the Motley Herbarium at Swansea, date about 1840. (See article by Rev. H. J. Riddelsdell, in *Naturalist* for 1902, p. 345). Beaumont also furnished plants from the Lake District and Scarborough, and one can only surmise that the wrong locality has been attached, and that in all probability the specimen came from Scarborough.]

*GALIUM CRUCIATA* (p. 51). A warning is furnished me by Mr. J. Needham that a bed of this at the side of Lee Mill Lane, Hebden Bridge, now three or four feet in extent originated accidentally. In the summer of 1889 he had this and other plants sent from Bedale in his vasculum, and having emptied the contents over the wall here, in order to use it on a ramble, he observed later in the season that the crosswort had established itself. The importance of the incident lies in its application to other cases where the origin of a species in a particular locality is, and must remain, a matter of conjecture.

*Artemisia Absinthium*, L.—72. Casual. 1900, waste ground, Skircoat.

*Petasites albus*, Gærtn. Alien. Established on the banks of Tag Lock.

*Doronicum Pardalianches*, L. Alien. Rastrick.—*R. Wood*.

*Lactuca Scariola*, L.—6. Casual. 1897, Elland (?)—*J. Firth*.

*Blackstonia perfoliata*, Huds.—60. (*Chlora*, L.) Casual. 1903, Elland.

*MYOSOTIS COLLINA* (p. 76). Doubtfully native, probably a Casual.

*STACHYS ARVENSIS* (p. 87). Not more than a Colonist.

*Plantago arenaria*, Waldst. & Kit. 1890, Box Trees Mill.

*Amaranthus retroflexus*, L. Casual. 1897, Elland (?)—*J. Firth*.

*EUPHORBIA HELIOSCOPIA* (p. 94). Rather, a Colonist.

*E. PEPLUS* (p. 94). Rather, a Colonist.

*BETULA VERRUCOSA* (p. 95). Appears to be commoner and *B. PUBESCENS* the rarer form, reported for Broadhead Clough and Colden Clough.

*SALIX PENTANDRA* (p. 97). 1902, Near Alcomden, Walshaw Dean.

*LISTERA OVATA* (p. 101). Cragg Vale.

*HABENARIA CONOPSEA* (p. 102). Ogden.

*Iris sibirica*. The Iris, established at Tag Lock, assumed to be *I. fœtidissima*, (p. 104) was submitted to Sir Michael Foster and proved to be *I. sibirica*, a native of Asia and Southern Europe.

*CROCUS NUDIFLORUS* (pp. 104-106). Several additional stations in the Ryburn valley have come to my knowledge, through Mr. Joe Firth, viz.: (xiii.) In a young plantation on the left bank of the Ryburn above Thorpe. (xiv.) In the field adjoining Turn Lee Farm, near Cotton Stones Church. (xv.) In the field fronting Deerplay Farm, on the road to Mill Bank. (xvi.) Near Upper Goat House, Rishworth.

*LEMNA MINOR* (p. 112). Above Brookhouse, Ovenden (900ft.)

*POTAMOGETON PUSILLUS* (p. 114). Outram's dam, West Vale.

*CAREX PANICULATA* (p. 116). Rediscovered in 1901, in abundance on the right bank of Widdop Water below the foot of Greave Clough.

- ALOPECURUS MYOSUROIDES (p. 122). Railway bank, Hipperholme.
- AGROSTIS CANINA (p. 122). Native. Rishworth moors.
- AIRA CARYOPHYLLEA (p. 123). Colonist. Railway banks, Hipperholme and Wyke.
- A. PRÆCOX (p. 123). Frequent on borders of moorland roads (*e.g.*, Booth Dean) and on moor edges.
- DESCHAMPSIA FLEXUOSA (p. 123). Very common in dry woods, on clough slopes, and in moorland pastures.
- HOLCUS LANATUS (p. 123). In damper situations than *H. mollis*, as in damp woods, on the edge of the canal and dams.
- TRISETUM PRATENSE (p. 123). In many meadows about Wyke and Hipperholme; also at Elland, and on the banks of Cold Edge dams, at 1200 ft.
- PHRAGMITES COMMUNIS (p. 124). A doubtful record; probably *Phalaris arundinacea* was intended.
- Festuca rigida**, Kunth—91. Colonist. Railway bank, Hipperholme, in 1900 and 1903.
- Bromus sterilis* (p. 128). Not Native, always of casual occurrence.

## CRYPTOGAMIA.

### FILICES.

- ASPLENIUM ADIANTUM-NIGRUM (p. 132). 1903, Several small specimens on a wall near Lumb Mill, Calder Valley.—*J. Needham*.
- ATHYRIUM FILIX-FÆMINA (p. 134).  
 Var. RHÆTICUM. Not uncommon: Turner Wood, Rishworth; Stanelly Clough, &c.  
 Var. INCISUM. Stanelly Clough.  
 Var. **ovatum**, Roth. Pecket Wood and Stanelly Clough.  
 Var. **fissidens**, Moore. 1892-3, Higher Greenwood.  
 Var. **Foxtoni**, Lowe. 1892, Under Foulds Hill, Hardcastle—*J. Needham*.
- LASTRÆA FILIX-MAS var. AFFINIS (p. 137). Pecket Wood.
- L. SPINULOSA (p. 137). Omit Ainley Wood.

### CHARACEÆ.

- Nitella flexilis**, Agardh—24. 1904, For at least twelve years in a pool at Spring Wood, between West Vale and Stainland.—*J. H. Bolton, teste W. West*. Abundant in the dam at Bowers Mill, Blackburn valley.

### MUSCI.

- CATHARINEA UNDULATA (p. 157), var. **minor**, W. & M. 1902, Near quarry, roadside, Pecket Wood.
- POLYTRICHUM JUNIPERINUM (p. 159). Green Hurst, Crimsworth Dean.
- FISSIDENS OSMUNDOIDES (p. 172). 1902, Horse Clough, above Lumb Fall, Crimsworth Dean.

F. TAXIFOLIUS (p. 172). A form with remarkably decurrent inferior lamina, was found at Hardcastle in 1903.

**Encalypta streptocarpa**, Hedw, 1902, Rather abundant on the wall top, road side, Pecket Wood. — *J. Needham*. Plants all barren, perhaps overlooked previously for this reason.

BRACHYTHECIUM VELUTINUM (p. 193), var. **prælongum**, B. & S. On grit rock in rill, Romfolly, Hardcastle.

HYPNUM FLUITANS, var. ATLANTICUM, (p. 199), forma **submersa** 1902, In pool, Erringden Moor.—*Journ. Bot.* xl. p. 415.

H. CUPRESSIFORME, var. RESUPINATUM (p. 200). 1902. On ash tree trunk from Ireland, at the bobbin works, Cote Hill.—*J. Needham*.

H. MOLLUSCUM (p. 201). Hardcastle.—*J. Needham*.

#### HEPATICÆ.

FRULLANIA DILATATA (p. 205). 1902, On ash tree trunk from Ireland, at the bobbin works, Cote Hill.—*J. Needham*.

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#### NOTE TO THE SERIAL ISSUE.

The foregoing corrections have reference to the final issue of the Flora in a complete form, which embodies between pages 1 and 120 numerous minor changes from the original issue with the *Halifax Naturalist*. The chief changes are:—

Additional records from the herbaria of Gibson and Leyland.

A revision of the fruticose brambles in Gibson's Herbarium.

A revision of the Gentians, which become *Gentiana Amarilla*, L. (= *G. axillaris*, Schm.) and *G. baltica*, Murb.

*Viola Riviniana*, Reich, replaces *V. silvestris*, Reich.

*Mimulus Langsdorffii*, Dow, replaces *M. luteus*, L.

*Stellaria aquatica*, *Trifolium arvense*, and *Conium maculatum* are reduced to Casuals; *Pedicularis palustris* and *Carduus crispus* regarded as Errors; and *Scrophularia aquatica* omitted.

Recent records are given for *Cerastium glomeratum* (Rishworth and Hebden Bridge), and *Rosa sepium* (Tag Lock).

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