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MOSS EXCHANGE CLUB.



REPORTS

AND

Extracts from the Club Note Books

For the Years 1899, 1900.

Stroud :

PRINTED BY J. ELLIOTT, HIGH STREET.

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THE FOURTH ANNUAL REPORT

OF THE

MOSS EXCHANGE CLUB, 1899.

The number of members is now 37, of whom 28 contributed 3071 plants, including 2099 Mosses, 947 Hepaticæ, and 25 to be named. Interest in Hepaticæ is increasing, and will no doubt be extended by Mr. Pearson's fine work on the "Hepaticæ of the British Isles," several parts of which have appeared. It is to be hoped that it may be followed by a reliable Handbook, with illustrations, or a Synopsis, which will be within reach of those who cannot afford the large work.

An important paper by one of our members, Mr. S. M. Macvicar, on the Hepaticæ of Moidart (*Journal of Botany*, Aug., 1899), proves that the West of Scotland is much richer in these plants than had been supposed.

After consultation with some of our leading members an attempt was made this year to submit the plants sent in for exchange to referees for examination and correction. This change caused some delay in the distribution and added considerably to the distributor's work, but will, it is hoped, make the specimens of more value, as a large number of errors in naming were in this way discovered and corrected. We cannot yet vouch for the correctness of every one, as it was not possible in the time to examine each packet out of more than 3000. Errors arise in some cases through mixture, in others when gatherings of the same species have been sent in the same bundle from several localities—a practice to be deprecated. There are two kinds of mixture: 1st of species in a packet, which is often unavoidable, especially in the case of Hepaticæ; 2nd, of species in a bundle of packets, all labelled the same.

In spite of these and other causes of error we may congratulate ourselves that a beginning has been made this year to overcome what has been hitherto the most serious fault in the working of the Club, the large number of errors in names. May we appeal to members to be more careful in the first instance, and not to put names without a ? unless they are sure, or have had their naming confirmed.

As time goes on we shall probably have fewer specimens to deal with, (it would be better if they did not exceed 2000 in one year.)

but better prepared, larger in amount, and above all, correctly named, to which the Club's stamp can be affixed with some confidence.

The best thanks of the Club is due to the following, for their kind and valuable services:—Mr. H. N. Dixon, who acted as chief referee for critical species and any difficult ones selected and passed on to him; Messrs. Barker, Ingham, Lett, Meldrum, Nicholson, Wheldon, and the Hon. Sec., who acted as assistant referees.

It is earnestly requested that any further errors which may be detected will be mentioned by members in the Note Book when it comes to them.

We hope that from time to time, say every two or three years, the distributor may be changed as is done in other Clubs. Mr. Wheldon has kindly consented to act next year, and also to be Hon. Treasurer, as the Hon. Sec. finds the work of the Club at present makes too large demands on his time.

It has been our practice to send parcels to all members whose subscriptions were paid after giving the first choice of course to those who contributed parcels for exchange.

We hope that the *Note Book* will be freely used to record useful observations, selections from which can be printed in the Annual Report.

Many complaints have been made of the small size of specimens contributed, and not without reason. In previous reports much has been said on this subject, which need not be repeated here. It would be far better to send fewer but better specimens, and we shall have to adopt strong measures next year to insure that the specimens sent out are sufficiently large in every case to exhibit the character of the plant. A bad specimen is never satisfactory, may lead to error, and will certainly not inspire gratitude towards the collector, while a good one is a joy for ever.

It may be well to allude to the working of Rule IV., which directs how members should mark their Catalogues of Desiderata, as it has been disregarded in some cases, and to suggest an improvement.

The Rule states that "each of his Desiderata should be marked," and no fault is found with the way in which the majority carry out the Rule. Some who have only a few plants, and want many, say, e.g. "Send me any but the commonest," instead of marking their catalogues.

Instead of such special directions, which cannot always be kept in mind, and may lead to confusion and mistake, a convenient plan is here suggested, (which is already followed by several members,) to meet these cases, as it has been found to work well.

Let the member who has few plants, but many wants, mark out with a cross, as the Rule directs, only the plants he has and leave his Desiderata unmarked. The distributor will then see at a glance the state of his herbarium, and can act accordingly. What has been said need not prevent him from marking with the horizontal line — any particular plants he is anxious to have besides.

It is most important when 30 catalogues have to be worked at once that there should be a uniform system of marking, and if this is carried out in all cases as it has been in most, according to our Rules, it will not only lighten the work of the distributor but contribute to the correctness of the results.

As far as the labelling of packets is concerned, it may be stated that it is not a matter of importance whether the catalogue numbers of species are written on them or not, the distributor goes by the names which should be written distinctly. The collector's name should also, of course, be given always, and if sent by another than the collector the member who communicates it should add his own name, with *com.* before it.

It is not fair that the time and patience of referees should be taken up with inadequate specimens, and that they should be held responsible for names given in cases where the material is not adequate to secure certainty in naming.

C. H. WADDELL,

Hon. Sec.

October, 1899.

NOTE.—While Mr. Wheldon has kindly undertaken to act as Distributor and Treasurer, I shall still keep the office of Secretary, and carry on the general work of the Club as before. Letters therefore should be addressed to me, unless connected with the distribution or subscriptions.

BALANCE SHEET, 1899. (To March 31st, 1900.)

£	s.	d.		£	s.	d.	
By Balance, 1898	6	13	3	To Rubber Stamp	0	4	0
.. 35 Subscriptions, 1899	8	15	0	.. Carrington's Papers	1	0	5
.. Sale of Catalogues—				.. Elliott, for Printing	3	18	0
By Messrs. Wesley, 4/-				Reports, 1896—8			
By Hon. Sec., 3/3	0	7	3	.. Stationery, Stamps,			
				and Expenses of	2	7	7
				Distribution of			
				Specimens, 1899			
				.. Balance—			
				Hon. Sec., Cash and			
				Stamps	£1	5	0
				Hon. Treasurer			
					£7	0	0
					8	5	0
					8	5	0
					£15	15	6
					£15	15	6

1899 DISTRIBUTION.

Members' Names.	Total No. of Specimens sent.	Mosses.	Hepaticæ.	For Naming.	Subs. 5s. Paid.
Mr. W. Allen ..	—	—	—	—	—
Miss E. Annitage ..	52	28	24	—	..
Mr. T. E. Bagnall ..	51	51	—	—	..
Prof. T. Barker ..	160	160	—	—	..
Mr. R. de G. Benson ..	—	—	—	—	—
Rev. C. H. Binstead ..	20	20	—	—	..
Mr. C. Crossland ..	21	9	12	—	..
Mr. H. Darton ..	57	56	—	1	..
Mr. T. Dennis ..	—	—	—	—	..
Mr. H. N. Dixon ..	36	36	—	—	..
Rev. W. L. Eyre ..	7	7	—	—	..
Mr. E. J. Elliott ..	12	11	—	1	..
Rev. S. Gasking ..	—	—	—	—	..
Mr. W. P. Hamilton ..	7	—	—	7	..
Mr. G. Holmes ..	25	25	—	—	..
Mr. E. C. Horrell ..	92	92	—	—	..
Mr. J. Hunter ..	4	—	—	4	..
Mr. W. Ingham ..	542	458	83	1	..
Mr. A. B. Jackson ..	60	60	—	—	..
Rev. Canon H. W. Lett	358	21	337	—	..
Rev. D. Lillie ..	54	46	3	5	..
Rev. W. R. Linton ..	104	22	166	6	..
Mr. S. M. Macvicar ..	154	6	148	—	..
Mr. R. H. Meldrum ..	76	76	—	—	..
Mr. F. T. Mott ..	25	18	7	—	..
Mr. W. E. Nicholson ..	238	238	—	—	..
Mr. J. B. Parker ..	—	—	—	—	..
Mr. W. H. Pepworth ..	—	—	—	—	..
Rev. H. P. Reader ..	156	75	81	—	..
Mr. E. S. Salmon ..	96	96	—	—	..
Mr. E. F. Shepherd ..	—	—	—	—	..
Sir J. Stirling ..	14	14	—	—	..
Rev. C. H. Waddell ..	—	—	—	—	..
Mr. A. W. Weyman ..	—	—	—	—	..
Mr. J. A. Wheldon ..	356	345	11	—	..
Mr. A. Wilson ..	59	59	—	—	..
Mr. W. Young ..	120	70	50	—	..
Gift of Hepaticæ from Mr. W. H. Pearson ..	25	—	25	—	—
(Members) 37	3071	2091	947	25	35

Sphagnum rigidum var. *compactum* Schp. Riniegie, Lybster, Caith. 13/6/98. D. LILLIE. "Yes."—H. N. D. Whit Moor, Raeburndale, W. Lancs., Oct., '98. A. WILSON. "Not the usual form. Perhaps one of the transition forms Braithwaite speaks of between the type and var."—T. Barker. "*compactum* with a *slight* approach to the type."—H. N. Dixon.

S. molle Sull. Upper Raeburndale, Oct., '98 A. WILSON. "Is *acutifolium* var."—T. B. Shanlieve Mourne mouns., Co. Down, 13 Oct., '98.—H. W. LETT. "Is *S. tenellum*."—T. B. "My specimen is anything but *S. tenellum*! I refer it to the var. *Mulleri* of *S. molle*. The retort cells of the branches are, it is true, very large, but this is the case with *molle*, (the Key to Sphagnum in the Handbook needs correcting on this point,) though they are less *recurved* than in *tenellum*. In other respects the two species have little in common"—H. N. D. Evidently two plants have been sent out under the same name.

Var. *Mulleri* Braith. Wet sandy hollows on Broadwater Forest, Sussex, 19/10/98. W. E. NICHOLSON.

S. subsecundum var. *viride* Boul. Lower Bleasdale, Garstang, Lancs., Dec. 98. A. WILSON.

„ Var. *obesum* Schpr. Longridge Fell, W. Lancs., June '98. J. A. WHELDON.

S. teres var. *squarrosulum* Warnst. forma. Nr. Netherton, S. Lancs. Dec. '98. J. A. WHELDON.

S. squarrosum var. *imbricatum* Schpr. Netherton, S. Lancs. Dec. '98. J. A. WHELDON.

S. acutifolium var. *fuscum* Schpr. Wearhead. Widdy Bank, Cauldron Snout. W. INGHAM.

„ Var. *tenellum* Schpr. Leckley Carr, Sept. 98. W. INGHAM.

„ Var. *ambiguum* Braith. Ingleboro, Aug., '98. J. A. WHELDON.

„ Var. *laetevirens* Braith. Whit Moor, Raeburndale, W. Lancs., Oct., '98. A. WILSON. "I hesitate to express a definite opinion as to the name of the var. Branches not laxly set, l. not suddenly narrowed to an elongated point, not (now at least) very bright green above."—T. Barker. "Not quite my idea of var. *laete virens*, I should say somewhat intermediate between that and var. *patulum*."—H. N. D. "The W. Lancashire specimens of this sent to the Club were named for me by Mr. Bagnall, and I recommended Mr. Wilson to so label them. Mr. Bagnall agrees with Prof. Barker that they are not exactly that form, and I doubt if it would be correct to refer them to the type, or any of our named vars. The plant sent as *S. molle*, from the same v. c. must according to Mr. Bagnall be referred to the same form. It differs from var. *laete virens* principally in having large non-margined fibrillose and porose stem

leaves. When our Sphagnum forms are worked out in accordance with the views of continental writers, this widespread fell plant will require a name, if it has not been already named abroad. We have other well-marked forms which do not agree with any of Dr. Braithwaite's forms, and in the experience of Mr. Wilson and myself these cannot be altogether dependant on situation."—
J. A. WHELDON.

S. simbriatum Wils. Eday, Orkney, 23/7/91. D. LILLIE.
—Calder Valley, above Oakenclough, W. Lancs., July, '98 A. WILSON.

[*S. Lindbergii* Schpr. Pools in a bay at 3000 ft., Bolkesjo Telemarken, Norway, July, '98. W. E. NICHOLSON.]

S. intermedium Hoffm. Harrisend Fell, Garstang. Whit Moor, Raeburndale A. WILSON.—Wearhead, W. INGHAM—Longridge Fell, W. Lancs. June, '98 "Branches unusually slender and attenuate"—J. A. WHELDON.

S. medium Limpr. "In 1899 I contributed some specimens of a *Sphagnum* from Geashill, King's Co., under the name of *S. papillosum* var. *confertum*, which Mr. Harold W. Monington states in the 'Journal of Botany' for January, 1900, to be *S. medium* Limpr. I have since examined it again and seen that he is correct."—
H. W. LETT.

Catherinea undulata ? var *Hausknechtii* Dixon. Bridgend, Dec., '98. J. HUNTER. "Is *C. undulata*, polysetous form. (N.B.—"Bridgend" hardly sufficiently localizes a moss.) H. N. D. Walton, S. Lancs., 3/12/98. J. A. WHELDON.

C. angustata Brid. Goudhurst, S. Kent. 6/98. E. S. SALMON.

C. crista James. Head of the Llwyth, Carmarthenshire, 8 Feb., 77. A. LEY. E. C. HORRELL, com.

Ditrichum flexicaule Hpe. Craig Chailleach, Killin, 7/96. W. YOUNG. "Is *Swartzia montana*."—R. H. MELDRUM.

Seligeria recurvata B. & S. Caton, Lancs., Sept., '90 J. A. WHELDON.

Ceratodon conicus Lindb. Mud capping of walls, Kingsthorpe, Northants, May, '94. H. N. DIXON.

Cynodontium Bruntoni B. & S. Crevices of rock, High Force, Teesdale, Durham, Aug. 7, '96. Lustleigh, S. Devon, July 17, '94. H. N. DIXON.

Dicranella secunda Lindb. Craig Chailleach, Perth., 24 July, '97. H. N. DIXON.

D. curvata Hedw. Snowdon District H. DARTON, May, '97.

D. crista Schp. Wet sandy bank, Warling hill, Sussex, 25/2/99. W. E. NICHOLSON.

D. Schreberi v. *elata* Schp. + *Physcomitrium pyriforme*. Terrington Carr, July 20, '98. W. INGHAM. "I should refer this to the type

rather than var. *elata*."—H. N. D. "I sent my specimen to Mr. Dixon and he writes: "This plant you sent is certainly v. *elata*, especially as regards areolation and tothing, (in size and height it is not very markedly so.) The plant I received from the M. E. Club was much smaller, with short leaves, only differing from the type in the *laxer* areolation. The whole gathering appears to include a series of forms, of which your taller specimen is good, though not robust var. *elata*, the smaller plants approaching the type and only differing in the *laxer* areolation, which is of course a character of importance." All the specimens were from the same spot. It is not likely there is any difference except in size."—W. Ingham.

Campylopus flexuosus? Moorland Watton, Caithness. Rev. D. LILLIE. "1, *C. flexuosus*. 2, *C. brevipilus*, almost entirely without hair points."—H. N. D.

C. introflexus Brid. Near Barmouth, North Wales, 3/9/98 T. BARKER.

C. Schimperi Milde. Ben Lawers, 7/96. W. YOUNG. Loch Earn, Ben Voirlich, Perthshire, 16 July, '97. H. N. DIXON.

C. Schwarzii Schp. ? Ben Lawers, 7/96. W. YOUNG. "Is *Ditrichum flexicaule*."—R. H. Meldrum.

Dicranodontium longirostre var. *alpinum* Schpr. Thrushgill Fell, Raeburndale, W. Lancs. A. WILSON, Oct., '98. "The type only. The var. has leaves not deciduous. A specimen of the var. from Ingleboro, leg. G. E. Hunt, is markedly different in this respect, although quite agreeing otherwise." Later Mr. Meldrum writes he overlooked in Schimper's description that the leaves in the var. are "vix" deciduous, and he is satisfied this is the variety." "The Ingleboro and W. Lancs. plants grow in large pulvinate tussocks in peaty bogs, sometimes two feet across. The var. can be distinguished at sight with ease."—J. A. Wheldon. "I feel no doubt it is the var. It is hard, however, to separate the type from the var. in the herbarium; nor do I get any help from Limpricht's description, for the very characters which he gives as separating the var. structurally from the type (clearly defined auricles, narrow border of elongate basal cells) I find most strongly marked in the very specimens which in habit, etc., are most strongly pronounced *type 1*."—H. N. Dixon.

D. fulvellum Sm. Summit of Ben More, Perthshire, 21 July, '97. Leg. BINSTED and DIXON.

D. falcatum Hedw. Near summit of Ben More, Perthshire. 21 July, '97 BINSTED and DIXON.

D. Starkei D. & M. Ben More, Perthshire, 21 July, '97. BINSTED and DIXON.

D. fuscescens Turn. No loc. or date. Com. F. T. MOTT. "Is *D. scoparium* forma v. *curvulum* Schp.?"—T. H. Meldrum.

Dicranum sp. Grianan Mt. Co. Donegal, Nov. '98." J. HUNTER. "Is *D. fuscescens* Turn."—H. N. D.

Similar label "Is also *D. fuscescens* Turn. (N.B.—When two plants are sent of identical labelling it is always well to distinguish them by two numbers, or A, B, for future reference and identification."—H. N. D.

D. scoparium var. *spadiceum* Boul. Wolfhole Crag, Raeburndale, W. Laues., Oct. '98. A. WILSON.

D. montanum Hedw. Crackley Wood, Kenilworth, Warwickshire. 4/82. "Very abundant in this wood, in 1882, but a few years after a railway cutting was made through this wood, and the moss disappeared; it occurs in other Warwickshire localities."—J. E. Bagnall.

D. asperulum Mitt. Rocks, Ballachulish, Argyleshire, 18 July, '98. BINSTED and DIXON.

Fissidens polyphyllus Wils. Pont Aberglaslyn, Carnarvonshire. D. A. JONES, April, '98.—Com E. C. HORRELL.

F. incurvus Starke. Cleveland, Reigate, 3/99 E. S. SALMON. Hothorpe Park, Northants, 3/98. H. P. READER.

Grimmia patens B. & S. Slioch, W. Ross.—E. S. SALMON, 8/96.

G. arenaria Hampe. (*curvula* Bruch.) Roadside between Dolgelly and Barmouth, N. Wales, Aug. and Sept., 1898. T. BARKER. "The moss distributed under this name when seen *in situ* looked so unlike *G. Doniana*, that the close resemblance of their leaf-areolation under the microscope was a surprise and puzzle. A reference to Limpricht's description of *G. arenaria* (Hampe) in Rabenhorst's Kryptogamen Flora, &c., and to Schimper's of *G. curvula* (Bruch.) in the Synopsis, and then to a specimen under the latter name sent out by Schimper left little doubt that the Welsh plant was the same as Hampe's species. Dr. Braithwaite and Mr. Dixon agreed to the correctness of this, the former stating that the species was quite distinct from *G. Donii*, while the latter inclined to a different view of their relationship. The distinction between them seems to consist of an aggregate of small differences, and whether the one is a variety or sub-species of the other, or they are specifically distinct may perhaps remain a matter of opinion. 'Lumpers' will dwell with most delight on the cell structure of the leaves, while 'splitters' will find a joy in noting the differences in the parts of the fruit. It may perhaps be useful to state here what appeared to me to be the cause of the different facies of the two mosses when seen in the field, (less noticeable in the herbarium,) in the Merioneth locality in dry weather, a difference also more striking, as both were growing in considerable abundance in close proximity. *G. arenaria* formed hoary tufts, the grey colour of the leaf points quite predominating over the green colour of the leaves, whereas in *G. Doniana* the dull green colour of the leaves prevailed, and the tufts were usually smaller. Indeed, when *G. arenaria* found a suitable crevice in the stone it tended to grow into large so called 'mouse-like' masses. The much greater hoariness of *G. arenaria* seemed due to the fact that the hair points of the leaves were longer and lay flat on the surface of the tuft, as if they had been smoothed with a brush, all pointing downwards, when as

usual the plant grew on a vertical or sloping surface. In *G. Doniana* the hair points were shorter, and stood *straight out* from the tuft, thus presenting a much smaller surface to the eye. Again, in *G. arenaria* the capsules (mostly old) were shorter, smaller, and *immersed* among the foliage, and even when numerous were to a considerable extent hidden from view; whereas in *G. Doniana* the capsules (old) were longer and more oval, and *stood out*, mostly *quite clear* of the foliage. I did not notice any forms which looked intermediate. In the beginning of last September I again met with *G. arenaria*, this time in the County of Denbigh, not far from Bettws-y-Coed, growing along with two forms of *G. Doniana*, but much less luxuriantly than in its Merioneth home, so that to the Denbigh, though not to the Merioneth plant, Limpricht's remark, 'a dwarfish *Grimmia Doniana*' is fairly applicable." T. BARKER.

Racomitrium heterostichum var. *gracilescens* B. & S. Killin, 7/93. W. YOUNG. "Is *R. aciculare*."—R. H. MELDRUM.

Coscinodon cribrosus Spr. Sterile. On walls near Barmouth, N. Wales, 8/9/98. T. BARKER.

Acaulon triquetrum C. M. Bare earth near the edge of the cliffs, Newhaven, Sussex. Feb., 96. W. E. NICHOLSON.

Pottia lanceolata? Fallow field, Hertford, Feb., '99. H. DARTON. "Is *P. intermedia* Fürn.—H. N. D.

P. recta Mitt. Garstang, W. Lancashire. ALBERT WILSON.

P. Starkeana C. M. Hertford. H. DARTON. "Is *P. minutula*. I can find no trace of a peristome, and the spores are those of *P. minutula*. W. E. N.

Tortula pusilla Mitt. Old Humberstone. A. B. JACKSON.

T. lamellata Lindb. Sherburne in Elmet. W. INGHAM.

T. rigida Schrad. Old Humberstone, Leicester. A. B. JACKSON.

T. angustata Wils. Sibbertoft, North Hants. H. P. READER. "If *angustata* is allowed specific rank, I suppose that this specimen must be referred here. Some of the leaves are characteristic of the sub-species, but others are less so. The capsule is more slender and has a longer operculum than in *T. subulata*. See Mr. Dixon's remarks on the specimens submitted to the Club in 1898."—W. E. N.

T. ruraliformis Dix. Barmouth. T. BARKER.

T. princeps De Not. Carnarvonshire. E. C. HORRELL.

T. canescens Mont. Stanmer Rock, Radnorshire, 18th March. C. H. BINSTED. "This is the exact date for gathering it in perfection. It is one of those precarious 'annual' kinds of mosses, whose existence depends on various local circumstances."—C. H. B.

Barbula lurida Lindb. E. J. ELLIOTT.—Same loc. G. HOLMES.

Barbula rubella Mitt. Northington, Hants. W. EYRE.

B. tephacea Mitt. Clevedon. H. DARTON. "A very luxuriant form, with longer leaves than is usual."—T. B.

B. fallax var. *brevifolia*. Leicester. A. B. JACKSON. "Some of the stems are characteristic of the var."—W. E. N.

B. recurvifolia Schp. Wearhead. W. INGHAM.—Litton Dale, Yorkshire. W. WEST.—Woodchester. H. P. READER.

B. spadicea Mitt. Broadwood, W. Yorks. J. A. WHELDON.
" *B. rigidula* Mitt." W. P. Hamilton. "Correctly named."—
W. E. N. "There must have been some mixture."—J. B. Jackson.

B. cylindrica Schp. Radford Semele, Warwick, 30/1/99 A. B. JACKSON. "Is *B. vincalis*."—W. P. Hamilton. "Correctly named."—W. E. N.

B. sinuosa Braith. Woodchester. H. P. READER.—Swarraton, Hants. W. FYKE.—Stroud. G. HOLMES.

Barbula? Dunbeath, Caithness, June, '97.—Rev. D. LILLIE.
"Is *Grimmia maritima* Furn. Barren."—H. N. D.

Barbula? Watten, Caithness. Stones beside well, 1897.—Rev. D. LILLIE. "Is an unusual and rather remarkable form of *Ceratodon purpureus*."—H. N. D.

Leptodontium gemmascens Braith. Thatch near Isfield, Sussex, Dec., '98.—W. E. NICHOLSON.

Mollia litoralis Sallagh Braes, Co. Antrim, 17/8/93—Coll., H. W. LETT. "This is *Zygodon Mougeotii* B. & S. Mr. Dixon agrees. Note the narrow tapering leaves and the *Zygodon* areolation."—W. Ingham.

Weisia crispata Jur. "After reading a recent article by Mr. H. N. Dixon in the 'Journal of Botany,' describing this species, and recording it from various localities in the North of England, I re-examined some specimens of a moss which I gathered on our Chalk Downs in February, 1898, and then named *Weisia tortilis*, and saw at once, as I had suspected after reading Mr. Dixon's article, that they should be referred to *W. crispata* Jur. I sent four specimens of this gathering to the 1898 distribution of the Club, and I should be glad if those members who received the specimens would rectify their naming. The specimens when gathered were rather immature, none of the lids having fallen, so that I had not examined the rudimentary peristome. I was very much puzzled by the moss when I gathered it, and decided it was *W. tortilis*. The most noticeable points of difference in the field are the much smaller size of *W. crispata*, which grows in low tufts, and fruits very freely, and the fact that the tufts do not become detached from the soil as those of *W. tortilis*. When growing, the plant looks more like *W. microstoma* than *W. tortilis*, and on our Downs might certainly be overlooked as that plant. *W. tortilis* is perhaps almost as common in Sussex as *W. crispata*, but it seldom fruits very freely."—W. E. Nicholson.

W. multicapsularis Mitt. Downs, Lewes, March, 1899. W. E. NICHOLSON.

W. tortilis C. M. Downs, Newhaven, 5/3/99. W. E. NICHOLSON.

W. tenuis C. M. Staffordshire. H. P. READER.

W. calcarea C. M. Wye Dale. F. T. MORR. Knaresborough. W. INGHAM. "I have carefully examined Mr. Ingham's plants from Knaresborough, and I cannot make them anything but *W. tenuis*, with which they agree well in the basal areolation of the leaves. They are rather robust for *W. tenuis*, but I have gathered a very similar barren form in Sussex."—W. E. N.

now referred
to *W. calcarea*
by W. N.
See Note Book

W. rupestris var. *intermedia*. Jack. Wearhead. W. INGHAM. "The only description which I have seen of this var. is that of Limpricht, who says, 'J. Jack on the 22nd Sept., 1859, gathered as *Gymnos calcareum* a very beautiful loosely tufted form, to which the name *intermedium* might be given, at Nuttachthal, near Stühlingen, in Baden. It has narrow, longly pointed, and strongly recurved leaves, (2 mm. long.) with a weaker nerve, which, as in *calcareum* is not broadened towards the base.' Mr. Ingham's moss is hardly likely to be taken for *calcareum*, but in some respects agrees with this description. Should it not be *intermedia* Limp.? Jack seems to have regarded it as *W. calcarea*."—W. E. N.

W. verticillata Brid. Grange Park, Hants. W. EYRE.

Trichostomum mutabile Bruch. Lybster, Caithness. Rev. W. LILLIE

T. tortuosum var. *fragilifolium* Dix. Silverdale, W. Lancs. J. A. WHELDON. "Correct. Some of the stems are more characteristic than others of the var."—W. E. N.

Cinclidotus fontinaloides, Bradgate Park, Leicester. A. B. JACKSON

C. Brebissoni, c. fr. Ash by a stream, Chailey, Sussex, 2 June, '98. W. E. NICHOLSON.

Encalypta ciliata Hoffm. Perthshire. WM. YOUNG.

E. rhabdocarpa Schwgr. Ben Lawers. WM. YOUNG.

E. streptocarpa, c. fr. Hedw. Tintern, Monmouth. A. LEY.

Granite Rocks, Fanad Point, L. Swilly, 17.7.98. J. HUNTER. "Is *Ulota phyllantha*."—H. N. D.

"I would make the suggestion that packets sent out should always bear the name of the sender, as well as the collector. Occasionally packets are sent bearing only the name of the latter, who is, perhaps, not a member of the Club. If a collector is not the same as the member who sends it out, I think the latter should add his other name 'Comm ...'"—H. N. D.

Anæclangium compactum Schwg. (forma laxa) Snowdon District. May, '97. H. DARTON.

Zygodon Sirtoni Schpr. Lybster, Caithness. Rev. W. LILLIE.

Z. viridissima var. *rupestris* Woodchester. H. P. READER.

Z. conoides H. & T. Dolgelly. T. BARKER.

Ulota crispa Brid. Skye. H. Wager. "I should refer this to *U. Bruchii*. The capsule is narrowed at the mouth, and larger than in *U. crispa*."—W. E. N.

Orthotrichum affine Schrad. Woodchester. G. HOLMES
Killin. W. YOUNG.

O. rivulare Turn. Horton, Yorkshire. G. HOLMES.

O. stramineum var. *patens* Vent. Killin. W. YOUNG. "These specimens belong to *O. Lyellii*. The robust habit and the numerous brown gemmæ afford the best means of identifying this species."—W. E. N.

O. stramineum Hornsch. Chalford, Stroud, on alder tree by stream. G. HOLMES. "This is *O. affine*. *O. stramineum* has a hairy vaginula and immersed stomata. The stomata in the present species are superficial. In Sussex *O. stramineum* generally occurs on beech, in rather dry woods, on the Chalk Downs."—W. E. N.

O. tenellum c. fr. Killin. Wm. YOUNG. "The fruit consisted of a single damaged capsule, with the peristome abraded. It appears to belong to *O. affine*, but such material is quite inadequate to illustrate a species of *Orthotrichum*."—W. E. N.

O. pulchellum. Watten Manse, Caithnesshire, May to Aug., 1898. Rev. W. LILLIE. "Correct. A fine series of good specimens of this beautiful little moss."—W. E. N.

——— ? On granite rock, Fanad Point, I. Swilly, July 17 '98. "Is *Ulota phyllantha*?"—C. H. W. "Yes."—H. N. D.

Tayloria tenuis Schp. Wet moorland, Borgan, Dunbeath, Caithness, July, 1894.—REV. D. LILLIE.

Nanomitrium tenerum Lindb. Newell's Pond, Horsham, Sussex, 17.9.98. W. F. NICHOLSON.

Amblyodon dealbatus P. B. Coatham Marshes, Sept., '98. W. INGHAM.

Meesia trichoides Spr. c. fr. "Approaching var. *alpinum* Boul." J. A. W.—Craig Chailleach, Killin, 7/96. W. YOUNG

Aulacomnium turgidum Schwgr. Ben Dheiceach, Perth. R. H. MELDRUM.

Bartramia stricta Brid. Stanmer Rocks, Radnorshire. Rev. C. H. BINSTED. "The only locality in Britain where it can now be had. It fruits there in March, but not plentifully."—C. H. B.

Breutelia arcuata Schp. With very young fruit. Precipice walk, Dolgelly, N. Wales, 24.8.98. T. BARKER.—Camlough Mount, Co. Armagh, Oct., '98. Rev. H. W. LETT.

Webera annotina c. fr. "I have on one or two occasions sent out specimens so labelled from the Scotch Highlands, (Ben More, Perthshire, &c.). I recently sent similar specimens to Dr Hagen, of Opdal, Norway, and much to my surprise he replied that they were not *W. annotina* at all, but *W. commutata* Schp. He added that the plant in question had been long taken by himself and most other bryologists in Scandinavia and elsewhere for *W. annotina*, and it has only been quite recently that the error has been detected; in consequence of which the distribution of the two

species as recorded in Scandinavia (and I may add, doubtless in Britain and elsewhere) will need careful rectification. As some members of the Club have received the specimens in question, and others are no doubt destined to suffer tribulation over the matter, I am glad to have the opportunity of repairing the error as soon as possible. For the sake of those in the same boat as myself, I may repeat Dr. Hagen's expression, 'commune naufragium dulce.' I must confess I have not at present mastered the distinguishing characters of the fruit of *W. annotina*, which would appear to be extremely rare. *W. commutata*, however has usually a somewhat metallic lustre when dry on the leaves, (as in *W. cruda*), which are moreover, broader on the barren shoots than in *W. annotina*, and shining ('glanzend,' 'nitidee,') plants in fruit named *W. annotina* should be looked upon with grave suspicion. The whole group, however, needs careful revision in the light of new observations. (such as those of Correns on the bulbils)." —H. N. Dixon. 9/4/00.

Pylaisia polyantha B. & S. W. YOUNG. Crail, N.B., Jan. '98. " *H. cupressiforme*, and differs from *P. polyantha* as follows: The areolation is considerably narrower. The basal angular cells are better defined. The capsule has a longer rostrate lid." —W. Ingham.

Pseudoleskea catenulata B. & S. W. YOUNG. Craig na Lochan, 1.96. " *Pterigynandrum filiforme* Hedw., approaching var. *heteropterum* Schpr. The cells are much longer, and the leaves much larger than in *P. catenulata*. The latter is also a much more delicate plant." —W. I.

Pterigynandrum filiforme var. *heteropterum* Schp. Ben Lawers, 7.96. W. YOUNG. "I make this intermediate, but nearer the var. than the type. The apiculus of the var. is wanting." —W. Ingham.

Orthothecium intricatum B. & S. Wearhead. W. INGHAM. Lathkill Dale, Derbyshire. A. LEY, leg. E. C. HORELL, com.

Brachythecium rivulare ♀ B. & S. var. *chrysophyllum* Spr., 8/94. Sherbrook, Cannock Chase, Staffordshire. J. E. BAGNALL. "Growing abundantly by the side of the Sherbrook. At present only the fertile flowers have been noticed, and although I have frequently searched, I have never seen it fruiting. The only Staffordshire locality." —J. E. Bagnall.

Isothecium myurum v. *minus* Bagn. Nothorpe Park, Northants, 2/98. H. P. READER. "This I make a small form of type. I have Bagnall's var. *minus*, and have carefully compared the two. With a good 2-in. objective the cells of the true var. are very distinct and short, whereas those of the plant in question are indistinguishable. The true var. has also acute and tapering leaves." —W. I.

Eurhynchium pumilum Schp. Lily woods, Woodchester, Glos. 8/98. H. P. READER. "This is *Amblystegium serpens* B. & S. *E. pumilum* is of much looser growth, has thinner tissue, with larger and looser areolation, and the leaves are squarrose, or almost squarrose, and distant both in the wet and dry state. *E. pumilum* is also a more delicate plant." —W. I.

Amblystegium Sprucei B. & S. "To an early distribution (1st or 2nd I think) I sent several packets labelled *Amblystegium confervoides*, Dove Holes, Dovedale, Derbysh. A recent examination of what remained of my gathering proved the moss to be *A. Sprucei*, both from the *areolation* of the leaves and from finding rather *coarse* serrulate bracts. I called it *A. confervoides* in deference to the opinion of the late Mr. Whitehead. I believe that *A. Sprucei* has not before been recorded for Derbyshire."—T. Barker, 21st April, 1900.

Amblystegium serpens var. *depauperatum* Boul. Lybster Burn, Caithness, 10/6/98. Rev. D. LILLIE. "This plant was sent with the doubtful naming ? *A. Sprucei* or *A. confervoides*. Careful examination however showed that though the smaller leaves often showed no trace of nerve, yet in the larger and stem leaves the nerve was present, often quite distinct and even, comparatively, broad, though very short, and ill-defined. This, together with the areolation, and general habit, showed it to belong to *A. serpens*, of which it is no doubt nearest to the var. *depauperatum* Boul., which is recorded from Keiss Links, in the same county. I have, since examining this plant of Mr. Lillie's, gathered a precisely similar one at Durness, on the north coast of Sutherland. I may add that Mr. Bagnall's opinion as to Mr. Lillie's plant coincides with the above."—H. N. D. "Since sending out specimens last year tentatively and wrongly named *A. Sprucei* (?) I have found it in various localities round the sea coast of Caithness and the north of Sutherlandshire, and Mr. Dixon notes that he has found it at Durness, so it seems to be most frequent here, in the extreme north of Scotland, always in my experience in a calcareous soil, either wet marly clay or shell sand. The colour, when growing, is rather curious when seen in a mass, being in some cases a rather bright golden yellow, and in other cases a brick red tinge, making patches of it somewhat conspicuous."—D. Lillie.

Alpine Mosses by the sea coast.—"It may be of interest to some members that I have gathered the following (which the books give as usually found at considerable elevations) on sandy links close by the sea shore, almost at sea-level, in a district far removed from any mountains, viz.: *Amblyodon dealbatus*, *Encalypta rhabdocarpa*, *Catocopium nigritum*, and *Swartzia inclinata*. Some of these at least are recorded from similar localities, but the difference of habitat is rather interesting. All the above were found growing in close proximity.—David Lillie." "Is it possible that the plants named by the Rev. D. Lillie have a decided maritime predilection, and only occur in alpine situations as survivors of the time when our mountain summits were islands, as is the case with some flowering plants with montane and maritime rôles of distribution? Most of the species he names occur at sea level, at much lower latitudes than the north of Scotland, e.g. on the Lancashire coast. We have no *Encalypta rhabdocarpa* but *E. streptocarpa* occurs on the sand hills, with the var. of *Amb. serpens* he so well describes, and *Amblyodon*, *Catocopium*, *Meesia*, &c."—J. A. Wheldon.

(1.)—*Amblystegium radicale* or *varium*. Wooden piles in Canal, Stroud, Glos., March, '99.—E. J. ELLIOTT.

(2.)—Ditto, ditto. "On the strength of No. 1 alone, I should have referred it to *A. Juratzkanum* Schp., with little doubt, though not as a strongly-marked form; but No. 2 connects it with *A. serpens* so distinctly that—the whole gathering being but small, and not in very good condition—I think it is better to suspend judgment for the present. *A. Juratzkanum* is closely allied to *A. serpens*, but in its most highly developed forms quite distinct, with larger, longer, widely-spreading or squarrose leaves, larger, more pellucid areolation, the cells at the extreme basal angles especially being *rectangular*, (those of *A. serpens* being quadrate or slightly transversely elongate,) the nerve *stronger*. It has been found in Sussex by Mitten, and Mr. Ingham has gathered it in several Yorkshire localities, and there are one or two other records. It is a plant to be looked for in all our districts, and one that needs further study. I incline to look upon it as a highly developed sub-species of *A. serpens*; it is also to be compared with *A. Kochii*, but with smaller leaves, and smaller areolation, more of the *serpens* character. Cheney's "North American species of *Amblystegium*," in *Botanical Gazette*, Oct., 1897, is a very valuable help to the study of our European species, which are almost all included."—H. N. DIXON.

Amblystegium irriguum Wils. On stone in stream. April, 1898. Grange Fields, Stroud. E. J. ELLIOTT.

— — Marsh, Ruscgill, Lybster, Caithness. 4/8 98. Rev. D. LILLIE "Is *Amblystegium filicinum* De Not."—H. D. N.

H. palustre? Langmell, Berviedale, Caithness, 18.8.98. Rev. D. LILLIE. "Is *Bracath. plumosum* forma *homomalla*."—H. D. N.

Hypnum elodes. From Skipworth Common, W. INGHAM. "I am sorry to say there is considerable mixture here, all the robust specimens being *Amblystegium filicinum*, a small form. Mr. Bagnall tells me that Wilson mentions the fact that a small form of *Hyp. filicinum* is liable to be mistaken for *Hyp. elodes*, and in the specs. I sent out this small form appears."—W. I.

Hypnum uncinatum v. *plumulosum* Schp. Hebden Bridge, 14/5/98. C. CROSSLAND & J. NEEDHAM.

"I make this *Hypnum fluitans* v. *falcatum* Schp.

(1.)—I have fortunately gathered *H. uncinatum* v. *plumulosum* in fruit near the High Force, Teesdale, June 4/97. My plant is far more delicate than the above, and the seta is quite short, less than $\frac{1}{2}$ -inch long, with a very small capsule, about half the size of the moss in question.

(2.)—If some of the leaves be stripped off the stem, leaving a few in situ and distant, and if the stem be then viewed under the microscope, small deep brown angular cells to the leaves will be seen, and these are characteristic of Schimper's var. *falcatum* of *H. fluitans*. These highly coloured angular cells are so small, and yet so distinct when viewed as above, that they are almost invariably left on the stem, even when the leaves are carefully detached.

(3.)—The perichætal leaves of the moss in question are perfectly smooth, whereas in *H. uncinatum* they are deeply sulcate.

(4.)—In July, 1898, I gathered the Hebden Bridge moss in abundant fruit on the top of Burnhope Seat, in Upper Weardale, and have sent it for distribution this year among the members of the M. E. C. I am convinced that *H. fluitans* v. *falcatum* Schp. is a moss that is not understood, and that is well worthy of careful study.—W. Ingham”

“I think both plants are correctly referred to *H. fluitans*.”
—J. A. W.

Hypnum hamulosum B. & S. Ben Lawers, Perth. R. H. MELDRUM. 16/7/91. “This is *Hyp. callichroum* Brid., but it has been a puzzling moss to decide. The thin-walled hyaline cells of the base separate it from *H. hamulosum*.”—W. I. “I agree with Mr. Ingham that this has been a puzzling moss to decide. I kept it for long in my collection of conundrums which I attack from time to time. Sometimes I decided it was *H. hamulosum*, and sometimes I made it *H. callichroum*. When I sent it to the 1898 distribution I was on the *hamulosum* side of the fence, but that summer on revisiting Ben Lawers I gathered a more typical form, which I determined to be *H. callichroum* and sent specimens so named to the '99 distribution. Shortly afterwards I received a note from Mr. Dixon mentioning that the 1891 plant had been sent him by Mr. Ingham queried *H. procerrimum*. Mr. Dixon suspected it was a new species and submitted it to M. Cardot who also thought it was new. After receiving a specimen of the later gathering and again examining 16/7/91, Mr. D. considered the latter a form of *H. callichroum*, and I think there is little doubt that such is the case.”—R. H. Meldrum.

Harpidium Kneiffii. Drumnahon Bog, P. of Aghaderg, Co. Down, 12/6/89.—Coll. H. W. LETT. (M. E. C. 1897.) “This is *Hyp. exannulatum*, (see basal areolation, stout nerve, basal margin denticulate). An exactly similar form from Longmynd, Salop, I had taken for *H. Kneiffii*, and several critical friends concurred. A recent overhauling of my ‘Harpid’ specimens, with Mr. Dixon’s help, renders this correction necessary. The plants are very slender or lax, with shorter stem leaves.”—R. de G. Benson.

H. molluscum Hedw. v. *condensatum* Schp. (Under this var. but not good. Ex. C. H. BINSTED.) W. R. Linton, Glen Callater, Aberdeen, July 24/'97. “I find this comes near the above variety.”

HEPATICÆ.

Frullania Tamarisci (L.) Connor Pass, Dingle, Kerry, June, '98.
REV. W. H. LETT and D. MCARDLE.

F. dilatata (L.) Ross Island. Killarney, Kerry. Sept., '97.
—REV. H. W. LETT.

Jubula Hutchinsiæ (Hook.) Hardcastle Wood, Hebden Bridge, Yorks., Feb., '99.—C. CROSSLAND & J. NEEDHAM.

Lejeunea Mackaii Hook. Ross Island, Killarney, 23 June, '98. REV. H. W. LETT.—Steep rocks by shore, Moidart, W. Inverness, 27.2.99.—S. M. MACVICAR.

L. hamatifolia (Hook.) Epiphytic on *Frullania Tamarisci*. Anniscaul L., Kerry, 15 June, '98. LETT and McARDLE. — Moidart, W. Inverness, 12.2.99. S. M. MACVICAR.

L. Holtii Spruce. Anniscaul Lough, Kerry, 15 June, '98.—REV. H. W. LETT and D. McARDLE.

Lejeunea ulicina Tayl. Moidart, W. Inverness, 22.2.99.—S. M. MACVICAR.

L. calyptrifolia (Hook.) Epiphytic on *F. Tamarisci*, Connor Pass, Dingle, Kerry. 16 Sep., 1897. H. W. LETT and D. McARDLE.

Pleurozia cochleariformis (Weiss.) Glen Lochay, Killin, 7/98 W. Young.—Ben Gaire, Moidart, Alt. 1,600. S. M. MACVICAR, 27.7.98.

Herberta adunca (Dicks.) Craig Mohr, Perthshire, 7/96. W. YOUNG.—Lough Eagle, Ventry, Kerry, 17 June, '98. H. W. LETT. Connor Pass, Dingle, Sept., '97. Coomanard Loughs, Kerry, June, '98. H. W. LETT.

Anthelia julacea (Light.) c. per. Moidart, 3.3.99 S. M. MACVICAR.—Killin, 7/93. W. YOUNG.

A. Juratzkana Limpr. Craig na Lochan, Perth. 7/96. W. YOUNG.

Blepharozia ciliaris (L.) Charnwood Forest, Leics., 3.77. F. T. MOTT.

Trichocolea tomentella (Ehrh.) Arboe, Tyrone, 1891. Rev. S. A. BRENNAN. Coin. H. W. LETT.

Lepidozia setacea (Web.) Hen Mount, Mourne Mountains, Co. Down, Aug., '87. Rev. W. H. LETT.

Lepidozia reptans (L.) Charnwood Forest, Leics. 3.77. F. T. MOTT.

Bazzania tricenata (Wahl.) Shady bank, Moidart, W. Inverness. 16.3.99 S. M. MACVICAR.

B. trilobata (L.) Shady bank, Moidart, 16.3.99. S. M. MACVICAR.—Glen Lochay, Killin, 7/98. W. YOUNG.

B. triangularis (Schleich.) Glen Lochay, Killin, 7/98. W. YOUNG. "My packet contains two stems of *B. trilobata*; the remainder is *Jung. orcadensis*."—S. M. Macvicar.

Kantia arguta (Mart.) Charnwood Forest, Leics. F. T. MOTT. Aug., '97.

Cephalozia bicuspidata (L.) Ballynahinch, & S. Donard, C. Down. H. W. LETT.

C. connivens (Dicks.) "The packets sent by me for the 1898 distribution as *Cephalozia connivens*, from Moidart require re-examination, as the plant was probably *Ceph. lunulifolia* Dum."—S. M. M.

Cephalozia fluitans (Nees.) Among *Sphagnum papillosum* in bogs near Rumster, Latheron, Caithness, 2/8/98. D. LILLIE.

C. Sphagni (Dicks.) Moidart. 10.3.99. S. M. MACVICAR.

C. divaricata. (Sm.) Charnwood Forest, Leics. F. T. MOTT, Aug., '97. "One packet is *bicuspidata*."—H. W. Lett.

Scapania aspera? Glen Lochay, Killin, Perth. 7.98. W. YOUNG. "Is *S. resupinata* (Dill. L.) May be known by its compact habit and matted with radicles."—C. H. W.

Scapania ornithopodioides (With.) Ben Gaire, Moidart, West Inverness. S. M. MACVICAR, 27.7.98.

Scapania nemorosa (L.) Charnwood Forest, Leics. F. T. MOTT. March, 1880.

S. undulata L. Cowshill, Durham and Weardale, Wearhead, July 23, '98. W. INGHAM.—Marsh near Reesgill Bridge, Lybster, Caithness, 8.6.98 Rev. D. LILLIE. "Is *uliginosa*."—H. W. L.

S. uliginosa Sm. Glen Lochay, Killin, 7.98. W. YOUNG. "One of the many puzzling forms of *S. undulata*."—H. W. L. "S. *undulata*."—S. M. M.

S. irrigua var. *major*. Wearhead, July 25, '98. W. INGHAM. "Is *Chiloscyphus polyanthos*—H. W. L. "May be *irrigua*. I don't know that species."—C. H. W. "Is *S. undulata* form."—S. M. M. "No *Chiloscyphus* in my packet; the same rigid distant leaved form of *S. undulata* is not uncommon in parts of W. Lancashire."—J. A. Wheldon.

Diplophyllum albicans (L.) ♂ & ♀ Kinnchalla, Mourne Mountains, Co. Down. 21 March, '98. H. W. LETT.

Chiloscyphus polyanthos (L.) Hothorpe Park, Northants, 4/98. H. P. READER.—Connor Pass, Dingle, Kerry, 16 June, '98. LETT and MCARDLE.

Harpanthus scutatus (Web. & M.) Moidart, W. Inverness. S. M. MACVICAR. 22.2.99.

Mylia Taylori (Hook.) Top of Burnhope Seat, Durham, July 23.98. W. INGHAM. "*Chiloscyphus polyanthos*."—H. W. Lett. "There may be mixture. Most of it is correct."—C. H. W. —Craig na Lochan, Perth. W. YOUNG. Slievenanee, Antrim, 10 July, 1891, and Lough Eagle, Ventry, Kerry, June, '98. Rev. H. W. LETT.—Edale, Derby, Aug. 4, 1898 Rev. W. R. LINTON. "Is *Nardia compressa*."—C. H. W.—Kinderscout, Derby. Rev. W. R. LINTON. And other localities. "Is *J. sphaerocarpa*." H. W. L.

Mylia anomala (Hook.) Leckby Carr, Sept. 9, '98. W. INGHAM. "Is *Mylia Taylori*."—C. H. W.

Plagiochila spinulosa (Dicks.) Sallagh Braes, C. Antrim, Aug., '97. —Connor Pass, Dingle, Kerry, 16 Jan., '98. MCARDLE & LETT.

P. tridenticulata (Tayl.) Torc Waterfall, Killarney, 14 Sept., '97. H. W. LETT & D. MCARDLE.

Jungermania cordifolia Hook. Anniscaul, Kerry, June, '98. LETT.
—Ben Lawers, Laiogh. W. YOUNG —Ireshope Burn, Durham,
W. INGHAM, July, '98.

J. inflata Huds. v. *compacta* Nees. Edale, Derby, Aug. 2, '98.
W. R. LINTON. "I am not quite sure of this."—C. H. W. "My
specimen is so scrappy that I cannot say."—W. Ingham.

J. turbinata Raddi. c. fr. Quarry, Tadcaster, June 3, '98. W.
INGHAM.—Gt. Shacklow Wood, Ashford. Cressbrook Dale,
Conies' Dale, Derby. W. R. LINTON.

J. sphærocarpa Hook. Waterfall, Cowshill, Durham, July 22, '98.
fide M. B. Slater. W. INGHAM. "*J. riparia*."—H. W. Lett. "I
think so."—C. H. W. "Is *Plagiochila asplenoides*, a form which
would rather come under var. *Dillenii* than the type."—S. M. M.
"It is not easy always to name *J. sphærocarpa* and its allies without
perianths."—C. H. W.

J. exsecta Schmid. Sandy peat bank, Moidart, 15.3.99. S. M.
MACVICAR.

J. barbata Schmid. 9.3.99 Moidart. S. M. MACVICAR.

J. Lyoni Tayl. 19.2.99 Moidart. S. M. MACVICAR.

J. Flærkii Web. & Mohr. Burnhope Seat. W. INGHAM. fide
M. B. Slater. July 23, '98.

J. gracilis Schl. (*attenuata*) Froggatt, Edale, Hathersage and
Baslow, Derby, Feb. & Mar., '98. W. R. LINTON.

J. incisa Schrad. Bog, Saintfield, C. Down. H. W. L. and
C. H. W., Sept., '98.—Ben Lawers & Craig na Lochan. W. YOUNG.

J. alpestris Schleich. Deep Dale, nr. Buxton, May, '98. Near
Taddington, Gt. Shacklow Wood, Ashford, Brassington Rocks,
and Bradwell, Derbyshire. Rev. W. R. LINTON.

J. ventricosa Dicks. Hartland Edge, nr. Beeby, Derby, 12 May,
'98.—Baslow, Derby, May 10, '98. Rev. W. R. LINTON.

J. orcadensis. Bank in ravine, Moidart, 17.3.99. S. M. MACVICAR.

J. minuta Crantz. Moidart, W. Inverness. S. M. MACVICAR.
16.3.98. "Is *Marsupella Funckii* Web. & Mohr. Both Mr. Waddell
and Mr. Macvicar agree it is *M. Funckii*. It is poor and stunted,
and Mr. Macvicar tells me this is the common form by footpaths
in W. Inverness. No doubt the specimens issued were mixed"—
W. Ingham. "This applies only to a few of the packets."—
C. H. W.

J. gracillima Sm. Claskerbeg, Aghaderg, Down, 3 Mar., '99.
H. W. LETT.

J. gracillima? (So named by the Club.) Tufaceous rocks, Great
Doward, Hereford, March, '99. E. ARMITAGE. "*J. sphærocarpa* I
think."—C. H. W. "Is *J. riparia*."—S. M. M.

Eucalyx obovata (Nees.) c. young fruit. Rock at side of stream,
Moidart, 3.3.99. S. M. MACVICAR.

Nardia compressa (Hook.) Shanlieve, Mourne mountains, Co.
Down, 13 Oct., '98. H. W. L. & C. H. W.

Nardia scalaris (Schrad.) Glendun, Co. Antrim, 1891. Rev. S. A. BRENNAN. Com. H. W. L.—Kinnehalla, Mourne Mountains, March, '98.—H. W. LETT.

Marsupella emarginata Ehrh. Glen Lochay, Killin, 7/98. W. YOUNG.—Kinnehalla, Mourne Mountains, Co. Down, 21 March, '98.—Coomanard Loughs, Kerry, 16 June, '98. H. W. LETT.

Acolia corallioides (Nees.) Ben Lawers. W. YOUNG, 7/96.

Fossombronia pusilla (L.) Bradley, Derby, Feb. 11, '99. Rev. W. R. LINTON.—Damp footpaths in Wood, nr. Rugeley, Staffs. Rev. H. P. READER, 9, '98. "The latter is *Fossombronia caespitiformis*. In this species the spores have spines, not ridges, as in *F. pusilla*. (*F. cristata* Lindb. should be looked for; it has 28-36 ridges, with considerable network on face of spore, while *F. pusilla* has 15-24 ridges, with little network.)"—S. M. M.

Blasia pusilla L. Camlough Mountain, C. Armagh, Nov. '98. H. W. LETT.

Pellia calycina Tayl. Red hill, Shrewsbury, 8.86. W. P. HAMILTON. "Named last year *P. epiphylla*, young stage." Mr. Macvicar confirms the original naming. The nerve is redder than usual.—W. P. H.

Aneura pinguis (L.) Bog, Moidart, W. Inverness. S. M. MACVICAR, 10.3.99.—Yeldersley, Derby. W. R. LINTON, Feb., '99.

A. multifida var. *ambrosioides* Nees. Rocks at side of stream, Moidart, W. Inverness. S. M. MACVICAR, 21.11.95.

Metzgeria furcata v. *æruginea* Hook. Burnham Wood, Dingle, Kerry, 14 June, '98. LETT & MCARDLE.

M. hamata Lindb. Anniscaul Lough, Kerry, 15 June, '98. LETT & MCARDLE.

M. conjugata Lindb. Killin, 7.98. W. YOUNG. "Is *M. pubescens*."—H. W. L. "*Conjugata*, but covered in places with some mould or growth."—C. H. W.

Chomiocarpon quadratus (Scop.) Ben Lawers, 7/96. W. YOUNG. Essnacroob, Glenariff, Co. Antrim, July, '91. H. W. LETT.—Seashore, Birkdale, Lancs., Aug, '98. J. A. WHELDON. "Is *Marchantia polymorpha*."—H. W. L. "Correctly named."—S. M. M.—Monks Dale, Feb., '99.—Cresbrook Dale, Jan. 31.99.—Peak Forest, Mar., '98.—Lathkil Dale, Mar., '98.—Hartle Dale, Bradwell, Derbyshire, Mar., '98. "Are all *Reboulia hemisphaerica*."—H. W. L. "Hartle Dale, Bradwell, Derby, 2 Mar., 1898., is *Reboulia hemisphaerica*, with immature female receptacles. There are mixed with it a few broken plants of what is probably *Conoccephalus conicus*. (My packet has not got the collector's name.)"—S. M. M.

Targionia hypophylla (L.) Dovedale, Derby. Rev. W. R. LINTON, Jan., 1899.

Riccia glauca L. Brailsford, Derby, Nov. 12, '98. W. R. LINTON.

Ricciocarpus natans L. Pond nr. Thurcaston, Leics. H. P. READER, 7, '98.

R. natans var. *terrestris*. fide A. Gepp. Nr. Thurcaston, Leics. H. P. READER, 10, '98.

Reference to Report for 1898, Page 19.

"*J. turbinata* Raddi? Taddington, Derby, March, '98. W. R. LINTON. Named *J. alpestris* by three botanists, is *J. bantriensis* var. *Mulleri* Nees. Herr Kaalaes confirms this name. Through the kindness of Mr. Linton I received several gatherings of the plant, and Mr. Ingham kindly lent me his specimen.

The stipules of the *bantriensis* group are frequently difficult to detect, as they are of much the same colour as the stem, and lie on it. A high power, with careful focussing, should be used in doubtful cases."—S. M. Macvicar.



THE FIFTH ANNUAL REPORT

OF THE

MOSS EXCHANGE CLUB,

1900.

The quality of the specimens and method of packing them has greatly improved. A few members however still wrap their packets in a manner not uniform with that generally adopted; and still fewer, I am pleased to observe, use printed paper for wrappers. This is very objectionable.

Some of the Referees complain that in a packet of a dozen specimens of one species, as many as eight localities were represented. This method of tying up plants from several localities in one parcel makes the Referees' work very arduous, and also renders specimens liable to be accidentally sent out without checking.

A few members have marked their Catalogues in a different manner to that prescribed in the Rules. This is very irritating and causes frequent errors where a large number of catalogues are being dealt with at once.

After these "grumbles," which I make in the interests of my successors, I must say that I have found the work of distribution both instructive and interesting.

J. A. WHELDON,

Distributor for 1900.

MOSES & HEPATICÆ RECEIVED FOR DISTRIBUTION, 1900.

Mosses, 1479. Hepaticæ, 750. Total, 2229

(For Naming, 30 in addition.)

Members' Names.	Mosses.	Hepaticæ.	Total.
Mr. W. Allen	—	—	—
Miss E. Armitage	52	—	52
Prof. T. Barker	100	—	100
Mr. R. de G. Benson	106	—	106
Mr. J. E. Bagnall, A.L.S.	57	—	57
Mr. Chas. Crossland, F.L.S.	—	—	—
Mr. T. Dennis	—	—	—
Mr. H. N. Dixon, M.A., F.L.S.	40	—	40
Rev. W. L. Eyre	4	3	7
Mr. E. J. Elliott	—	—	—
Rev. S. Gasking, B.A.	—	—	—
Mr. E. C. Horrell, F.L.S.	50	—	50
Mr. G. Holmes	—	—	—
Mr. J. Hunter	—	—	—
Mr. W. P. Hamilton	—	6	6
Mr. W. Ingham, B.A.	123	22	145
Mr. A. B. Jackson	47	—	47
Rev. H. W. Lett, M.A.	73	384	457
Rev. D. Lillie	90	26	116
Rev. W. R. Linton, M.A.	—	114	114
Mr. S. M. Macvicar	—	67	67
Mr. R. H. Meldrum	—	—	—
Mr. F. T. Mott, F.R.G.S.	—	—	—
Mr. W. E. Nicholson	80	—	80
Mr. J. B. Parker	3	—	3
Mr. W. H. Pepworth	—	—	—
Rev. H. P. Reader	63	58	121
Mr. E. S. Salmon	117	8	125
Sir J. Stirling	13	—	13
Rev. C. H. Waddell, M.A., B.D.	88	9	97
Mr. A. W. Weyman	—	—	—
Mr. J. A. Wheldon	266	49	315
Mr. A. Wilson, F.L.S.	57	4	61
Mr. W. Young	50	—	50

Sphagnum cymbifolium var. *squarrosulum* N. & H. Wildesley Green, Salop. June, '97. R. DE G. BENSON. "Perhaps the leaves are squarrose enough."—Prof. Barker. "I think sufficiently marked, always provided it is not *S. turfaceum* Warnst., which is like *cymbifolium*, with squarrose leaves."—H. N. Dixon.

S. Austini var. *imbricatum* Ldb. Near Actrinloch, Latherow, Caithness, 9 April, 1900. W. LILLIE

S. turfaceum Warnst. Swampy canal, Brookwood. v. c. 17. 7 April, 1900. E. C. HORRELL.

S. medium Limpr. White Moss, Hindburn. v. c. 60. Oct., 1899. J. A. WHELDON & A. WILSON.—Foulshaw Moss, Westmoreland, Sept., 1899. MESSRS. STABLER, LETT & WADDELL.

S. papillosum var. *sublaeve* Warnst. (teste E. C. Horrell). Udale, W. Lancs., Oct., 1899. J. A. WHELDON & A. WILSON.

S. rigidum var. *compactum* Schpr. Whitemoss, Hindburn, v. c. 60. Oct., 1899. J. A. WHELDON & A. WILSON. "Not quite the var. *compactum* as that is represented in Herb. Whitehead. Looks as near the type, so is perhaps an intermediate form."—Prof. Barker. "I think all our W. Lancs. *S. rigidum* is referable to var. *compactum*. We have forms nearer to the type than this, but which were not accepted as such in previous exchanges. It is very variable in colour and density."—J. A. Wheldon. "I should certainly have considered this var. *compactum*."—H. N. Dixon.

S. squarrosum Pers. Skiddaw, July, 1897. R. DE G. BENSON. "Cuticle of more than two layers of hyaline cells. This suggests *S. teres* var. *squarrosulum*."—Prof. Barker. "This must be held nearer *squarrosum* than *teres*, in spite of the more numerous cuticular layers."—H. N. Dixon.

S. subsecundum var. *contortum*. Longmynd, Salop, July, 1897. R. DE G. BENSON. "Smaller form looks like badly developed *contortum*; larger may perhaps belong to var. *turgidum*?"—Prof. Barker. "Two forms, near vars. *turgidum* and *squarrosulum*; but on the whole I should put both as vars. of *contortum*."—H. N. Dixon.

S. subsecundum var. *contortum* (with forma *simplicissimum* Milde. ?) Skiddaw, July, 1897. R. DE G. BENSON. "I don't think there is any typical *contortum* here, nor is it probably the same as Milde's *simplicissimum*, though it seems not possible at present to see a specimen of this last."—Prof. Barker. "Mr. Horrell says that this ought to be *S. Gravetii* Warnst., if there is any value in the character of the relative sizes of the pores on the upper and under sides of the leaves of stem and branches. *S. Gravetii* is one of the recent species Warnstorf has obtained by minute dissection of *S. subsecundum*. It is a young and imperfectly developed specimen, and Mr. Horrell is not prepared to insist that it is actually *S. Gravetii*, (an example of which is No. 19 Braith. *Sphagna exsicata*)." —A Gepp.

S. laricinum Spr. Newbridge Bog, Ashdown Forest, Sussex, 25 June, '99.—W. E. Nicholson.

Sphagnum acutifolium Ehrh. var. Saddleback, July, 1897. R. DE G. BENSON. "As near the type as any of the 'Handbook' varieties."—Prof. Barker.

——— var. *elegans* Braith. Near White force, v. c. 65., 20 Aug., 1897. W. INGHAM. "Not var *elegans*, agreeing ill with Dr. B.'s description, except as to stem leaves, and quite different in appearance from specimens I have. More related to var. *tenellum*?; perhaps does not agree with any of the 'Handbook' varieties."—Prof. Barker. "I agree that it is not var. *elegans*, though I do not feel able to give to give it its proper name."—H. N. Dixon.

——— var. *versicolor* R. & W. Widdy Bank Fell, at 1400 feet, v. c. 66., 10 Sept., 1899. E. C. HORRELL.

S. subnitens R. & W. var. *griseum* Warnst. Roseberry Topping, at 900 feet, v. c. 62., 6 Sept., 1897. E. C. HORRELL.

S. fuscum Klinggr. Widdy Bank Fell, at 1400 ft., v. c. 66., 10 Sept., 1899. E. C. HORRELL.

S. fimbriatum Wils. Bentley Park, Warwicks., July, 1887. J. E. BAGNALL.—Newbridge Bog, Ashdown Forest, Sussex, 25 June, 1899. W. E. NICHOLSON.

S. cuspidatum Ehrh. Bog holes, Ballygowan, Co. Down, Sept., 1898. C. H. WADDELL.

——— var. *Torteyanum* Braith. Hambleton Hills, Kilburn, v. c. 62, 24 June, 1899. W. INGHAM. (teste Dr. Braithwaite.)

Andreaea alpina Sm. Bowfell, Westmoreland, July, 1898. A. WILSON.

A. Rothii var. *falcata* Ldb. Near Barmouth, April, 1878. Legit J. WHITEHEAD. Com. T. BARKER.

A. nivalis Hook. Ben Nevis, Leg. J. Whitehead, July, 1875. Com. T. BARKER.

Tetraphis Browniana Grev. Waterfall on Whiteray Beck, Hindburn, v. c. 60. March, 1900.—A. WILSON.

Catharina undulata var. *minor* W. & M. Penyard Wood, Herefordshire, April, 1899.—E. ARMITAGE.

C. crispa James. Stalybrushes, Cheshire, July, 1865. Legit. R. Scholefield. Com. T. WHITEHEAD.—Udale, v. c. 60, June, 1899.—J. A. WHELDON & A. WILSON.

Oligotrichum incurvum Ldb. Longridge Fell, v. c. 60, Feb., 1899.—J. A. WHELDON.

Polytrichum gracile Dicks. Sutton Park, Warwickshire, June, 1880. J. E. BAGNALL.—Brynmawr Moor, Brecknockshire, June, 1899. A. LEY & E. ARMITAGE.

Ditrichum flexicaule var. *densum* Braith. Mag. limestone quarry, Doncaster. 7 March, 1900. W. INGHAM.

D. homomallum Hpe. c. fr. Trossachs, Perth., July 1898. C. H. WADDELL.

Swartzia montana Ldb. c. fr. Easgill, near Leck, v. c. 60, June, 1899. J. A. WHELDON & A. WILSON.

S. inclinata Ehrh., Sandy links near the sea, Murdistoft, Caithness, 1 July, 1899. D. LILLIE.

Ceratodon conicus Lindb. c. frt. Mud cap of wall, Kingsthorpe, Northampton, May, 1894. H. N. DIXON.

Rhabdoweisia denticulata B. & S. Maiden Pap, Caithness, 9 June, 1899. D. LILLIE.

Cynodontium virens Schpr. Val d'Arpette, nr. Champex, Valais, Switzerland, 1 Sept., 1899. J. STIRLING.

C. polycarpum Schpr. Montanvert, Chamonix, Hte. Savoie, 21 Aug, 1899. J. STIRLING.

Dichodontium pellucidum Schp. ? Near Downhill, Co. Derry, June, 1898. J. B. PARKER. "Is *D. flavescens*."—R. H. Meldrum.

—— var. *compactum* Schpr. Wearhead, v. c. 66, 22 July, 1898. (teste H. N. Dixon.) W. INGHAM.

—— var. *strictum* Braithw. Craig Cillie, Brecknock, June, 1899. C. H. BINSTED & E. ARMITAGE. "I should not so name this specimen. I consider it one of the compact short-leaved forms of *D. pellucidum*."—R. H. Meldrum. "I find one leaf out of 37 of the *strictum* type, or approaching it. I should name it simply *D. pellucidum*."—W. Ingham.

sericea *Dicranella heteromalla* var. ~~*stricta*~~ Schp. c. frt., Widdy Bank, v. c. 66, 7 June, 1897. W. INGHAM. (Teste Dr. Braithwaite and H. N. Dixon.)

D. crispa Schp. Damp walls, Alderley Edge, Cheshire, Oct., 1865. Legit. J. Whitehead. Com. Prof. Barker.

D. secunda Ldb. Wood, Montan vert, Chamonix, Hte. Savoie, 21 Aug., 1899. J. STIRLING.

D. Schreberi Schp. c. frt. Stounall, Staff's., Oct., 1897. J. E. BAGNALL.—Roadside near Three Bridges, Sussex, 27 Jan., 1900. W. E. NICHOLSON.

D. squarrosa Schp. c. frt. Tatham Beck, Hindburn, v. c. 60. Sept. & March, 1899. A. WILSON.

Blindia acuta B. & S. Buttermere, Cumberland, July, 1897. E. B. BENSON.

Dicranoweisia crispula Ldb. Val de Berard, Hte. Savoie, 24 Aug., 1899. J. STIRLING.

Campylopus Schwarzii Schp. Derrymore River Glen, Corcaguiny, Kerry, 22 April, 1899. H. W. LETT.

C. flexuosus var. *paradoxus* Husn. Kinder Scout, Derbyshire, March, 1882. J. WHITEHEAD. Com. T. Barker.—Longridge Fell, v. c. 60. Jan., 1899. J. A. WHELDON.

C. atrovirens De Not. Rosset Gill, Langdale, Westmoreland, July, 1898. A. WILSON.

Campylopus atrovirens var. *epilosus* Braithw. Quinag, Inchnadamph, Sutherland, July, '99. Messrs. DIXON, NICHOLSON & SALMON.

Dicranum Starkii W. & M. Meall Ghaerdie (= Ghirdy,) Perth., July, 1874. J. WHITEHEAD. Com. T. Barker.

D. fuscescens Turn. Helvellyn, July, 1897. E. B. BENSON.

D. majus Turn. c. frt. Saintfield, Co. Down, Oct., 1895. C. H. WADDELL.

D. Scottianum Turn. Lower Lough Bray, Wicklow, 27 June, 1898. H. W. LETT.—Loch Assynt, nr. Inchnadamph, Sutherland, July, 1899. Messrs. DIXON, NICHOLSON & SALMON

D. strictum Schleich. On old pales, Blithfield Park, Staffs, June, 1899. H. P. READER.

D. montanum Hedw. Tree trunks. Sheet Hedges Wood, Leicester, 30 Apr., 1899. A. B. JACKSON. (New to v. c. 55.)

D. uncinatum C. M. Glen Dubh, Inchnadamph, Sutherland, July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

D. asperulum Mitt. Wood by Loch Assynt, Sutherland, 23 July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

Fissidens tamarindifolius Wils. Bank by the Adur, Southwick, Sussex, 24 Feb., 1900. W. E. NICHOLSON. "These specimens do not well agree with the description in the 'Handbook' or 'Moss Flora,' but they are very close to *F. tamarindifolius*, as in Wilson's published exsiccata. Mr. Bagnall thinks that two rather different plants are known as *F. tamarindifolius*. The leaves are mostly of the *tamarindifolius* type, but the stems are short, as indeed they are in Wilson's plants which I have seen. In any case the species is close to *incurvus*."—W. E. N. "Fasciculate barren shoots at base of stem, and leaves nearer the *tamarindifolius* shape than typical *incurvus*. Certainly not *incurvus* as we have it."—J. A. Wheldon. "'Stem taller and leaves more distant' than *incurvus* are points in which this specimen differs from the description, but these characters are of less importance than the shape of the leaf, and I favour the view that this should be named *F. tamarindifolius*."—R. H. Meldrum.

F. decipiens De Not. Old limestone quarry, Kendal, Westmoreland, Sept., 1899. C. H. WADDELL. "Cells too large for *decipiens*. This dark-coloured compact form of *F. adiantoides* is common on the limestone rocks of W. Lancs. It may be the var. *collinus* Mitt.?"—J. A. Wheldon. "I agree with you that the *Fissidens* is rather a form of *adiantoides* than *decipiens*. The cells of this plant, while smaller than the typical form of *adiantoides*, are distinctly larger and less obscure than in *decipiens*."—R. H. Meldrum. "The *Fissidens* is curious. I think it must be called a small-celled form of *F. adiantoides*, the cells being nearer in size to that, (about 11-15 μ .) and not obscure. *F. collinus* was described for a *short* chalk form I think. Braithwaite could find no difference in the size of

the cells from *F. adiantoides*, while Mitten's specimen at Kew is certainly *F. decipiens*! So one cannot well form an opinion of what *F. collinus* really is, but I hardly think this quite agrees with Mitten's description."—H. N. Dixon.

F. ———? Wet rocks, Bridge End Glen, Co. Donegal, Mar., 1900. J. HUNTER. "Apparently bears a close resemblance to *F. Curnovii*, and grew in a similar habitat to that shown in the Moss Flora."—J.H. "I think undoubtedly *F. Curnovii*."—J. A. Wheldon. "Is, as suggested, *F. Curnovii*?"—R. H. Meldrum.

F. adiantoides L. a large form. Derrymore River Glen. Kerry, 22 April, 1899. H. W. LERT. "This large sub-aquatic dark green form is frequent in Yorks. and Lancs., and often much larger than these specimens, which are not unusually large for the species."—J. A. Wheldon.

Grimmia apocarpa var. *gracilis* W. & M. Gorges de la Diosaz, Hte. Savoie, 23 Aug., 1899. J. STIRLING. "According to specimens and descriptions, this var. is much more slender and elongated than the Savoy plant, which seems to be a pruinose form of *G. apocarpa*. Perhaps the best name for it is var. *incana* mentioned in the Moss Flora."—R. H. Meldrum. "Agrees with var. *gracilis* in the short second capsules and slender habit. I should consider it a somewhat stunted form of that, not knowing var. *incana*."—J. A. Wheldon.

G. torquata Hornsch. Ben Lawers, Perthshire, July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

G. trichophylla Grev. Groby Road, Leicester, March, 1900. A. B. JACKSON. "I see no reason for so naming this. I should say *Barbula cylindrica*."—R. H. Meldrum. "Is *Barbula cylindrica*?"—W. E. Nicholson.

G. patens B. & S. c. frt. Ben Lawers, Perthshire, July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

Racomitrium protensum Braun? Settle, 18 Aug., 1899. J. B. PARKER. "Is *Anomodon viticulosus*."—R. H. Meldrum.

Acaulon muticum C.M. Fallows, Hawkesyard, Staffs., Feb., 1899. H. P. READER.

Tortula marginata, Spr. Walls of Ashley Mill, near Bowdon, Cheshire, Oct., 1881. G. A. HOLT. Com., T. BARKER.

Tortula levipila? Zermatt, Switz., 25 June, 1899.

Barbula ———? Zermatt, Switz., 18 June, 1899.

"On first examination of these species I was inclined to refer them to *Tort mucronifolia*, Schwgr., but on looking up the species in Boulay I thought that both might be referred to his var. *integrifolia* of *subulata*. I therefore referred both specimens to Mr. Dixon, who reports on them as follows:—'I should think you are right in referring the Swiss *Tortula* to *T. subulata* var. *integrifolia* (Boulay), certainly the Zermatt one, which *inter alia* has the cells decidedly papillose. The Andermatt plant seems a nearer approach

to *mucronifolia*, but there again the cells are not absolutely smooth nor the leaves absolutely unbordered. Still it agrees very nearly with what I have under that name, and I think it must be conceded that it is nearer to *mucronifolia* than to *subulata* var. *integrifolia* (typical). The two seem (teste Boulay) to run so much into one another that it would seem immaterial whether it is called var. *integrifolia*, closely approaching *mucronifolia*, or *mucronifolia*, slightly approaching the other.' Limpricht is certainly in error in regarding the var. *integrifolia* Boulay as synonymous with *Tortula angustata*, Wils., which has the leaves strongly bordered."—W. E. Nicholson.

Tortula princeps De Not. Limestone crags, Inchnadamph, Sutherland, 19 July, 1899. Messrs. NICHOLSON, SALMON & DIXON.

T. ruraliformis Dixon. Coast sandhills, St. Annes, v.c. 60, July, 1898. J. A. WHELDON.—Seashore, Hunstanton, v.c. 28, 27th July, 1899. A. B. JACKSON.—Dunnet Links, Caithness, 12 Sept., 1899. D. LILLIE.

Barbula lurida Ldb. c. frt. Stone wall, by Water Stone Mill, near Hoathly, Sussex, 17 March, 1900. W. E. NICHOLSON.

B. tophacea Mitt. Mullion, Cornwall, 1899. W. EYRE.

B. recurvifolia Schp. Walls, Litton [Yorks. probably]. J. Whitehead, June, 1879. Comm. T. BARKER. "I have a specimen from 'Littondale, Yorks.,' from Mr. Whitehead, which clears up all doubt as to the county"—J. A. Wheldon.

B. gracilis Schwgr. Among grass on the Race Hill, Lewes, 26 Feb., 1900. W. E. NICHOLSON.

B. convoluta var. *Sardoa* B. & S. Roadside on the chalk, Lewes, March, 1900. W. E. NICHOLSON.

Leptodontium gemmascens Braith. Old thatch, Betchworth, Surrey, March, 1900. E. S. SALMON.

Weisia calcarea C. M. Ashwood Dale, Buxton, Nov., 1881. J. WHITEHEAD. Com. T. Barker.

W. rupestris C. M. Craig Cillie, Brecknocks., June, 1899. C. H. BINSTED & E. ARMITAGE.

—— var. *stelligera*. Falcon Clints, v.c. 66, July, 1898. W. INGHAM (teste Braithwaite & Bagnall).

—— var. *affinis* Ingham. Falcon Clints, v.c. 66, 26 July, 1898. W. INGHAM.

W. verticillata Brid. Mullion, Cornwall, 1899. W. EYRE.—Limestone cliffs by springs, Black Fossgill, Ilkley, Yorks., c. frt., 13 July, 1896. H. N. DIXON.—Near Aysgarth, N. Yorks., c. frt., June, 1897. J. A. WHELDON.

Trichostomum crispulum Bruch. c. frt. Craig Cillie, Brecknocks., June, 1899. C. H. BINSTED & E. ARMITAGE.

T. mutabile, var. *littoralis* (Mitt.). Between Emalough and Inch, Corcaguiny, Kerry, 18 Apr., 1899. H. W. LETT.

Trichostomum mutabile Bruch. Tresca, Scilly Is., 1899. W. EYRE. "Is *Zygodon viridissimus*. None of the *Trichostoma*, as understood by Dixon, grow on trees."—W. E. Nicholson.

T. tortuosum Dixon. c. frt. Gorges de la Diosaz. Hte. Savoie, 23 Aug., 1899. J. STIRLING.—Grange-over-Sands. (Lake) Lancs., July, 1897. E. B. BENSON.

Encalypta ciliata Hoffm. Zermatt, Switz., 21 June, 1899. J. B. PARKER.

E. rhabdocarpa Schwgr. Sandy links near the sea, Murdistoft, Caithness, 1 July, 1899. D. LILLIE. "A low station for this. I have however gathered it close to the sea in the North of Norway. Correctly named."—W. E. Nicholson.

E. streptocarpa Hedw. c. frt. Killin, July, 1899. W. YOUNG.

Anæctangium compactum Schwgr. Gorges de la Diosaz, Hte. Savoie, 23 Aug., 1899. J. STIRLING.

Zygodon Mougeotii B. & S. Connor Hill, Corcaguiny, Kerry, 17 Sept., 1897. H. W. LETT.

Z. Stirtoni Schp. Banks near the sea, Canisbay, Caithness, 14 Oct., 1899. D. LILLIE.

Z. gracilis Wils. Walls, Middlehouse, near Malham, W. Yorks. J. WHITEHEAD. Com. T. Barker.

Ulota crispa Brid. Trees by Derwentwater, Cumb., July, 1897. E. B. BENSON. "Correct. Most of the capsules in one of the specimens which I have marked might be referred to var. *crispula*."—W. E. Nicholson.

U. Drummondii Brid. Birch near Kenmore, Perth, 28 July, 1899. Messrs. DIXON. SALMON & NICHOLSON.

Orthotrichum pulchellum Sm. Lather-on-Wheel, Caithness, 29 May, 1899. "Yes. Mixed with a little *O. affine*."—W. E. NICHOLSON.

Orthotrichum affine v. *fastigiatum*? Tree trunk, Pengethly, Herefordshire, May, 1899. E. ARMITAGE. "I should not refer these specimens to the var. *fastigiatum*. I have compared them with an original specimen of Bruch's from Zweibrucken, and Bruch's plant is much shorter, with shorter, more obtuse leaves, with laxer areolation, and also has a shorter, more immersed capsule, with more prominent ribs."—W. E. Nicholson.

Splachnum vasculosum L. Bog on summit of Craig Chailleach, Perth., 24/7/97. Messrs. NICHOLSON, SALMON & H. N. DIXON.

Tetraplodon mnioides B. & S. Skiddaw, Cumberland, July, 1897. E. B. BENSON.—Shan Slieve, Mourne Mtns., Co. Down, Oct., 1898.—C. H. Waddell.

Discelium nudum Brid. Bredbury, Cheshire, March, 1866. J. WHITEHEAD. Comm. T. Barker. Udale, W. Lancs., March, 1900.—J. A. WHELDON & A. WILSON.

Funaria Templetoni Sm. Reisgill Burn, Lybster, Caithness, 6 June, 1899. D. LILLIE.

Funaria calcarea Wahl. Silverdale, W. Lancs., March, 1900.
J. A. WHELDON & A. WILSON.

Amblyodon dealbatus P. B. Southport, June, 1866. Ex. herb.
J. WHITEHEAD. Com. T. BARKER. "Still very plentiful there."—
J. A. Wheldon—Reiss Links and Lanurdestoft Links, Caithness,
July, 1899. D. LILLIE.—St. Anne's, W. Lancs., July, 1898. J. A.
WHELDON.

Aulacomnium turgidum Schwgr. Ben Heasgarnich, Perth.,
July, 1899. W. YOUNG.

Timmia ———? Rocks, Vernayez, Switzerland, June, 1899.
J. B. PARKER. "Is *T. bavarica* Hessel."—Messrs. Barker and
Nicholson.

Conostomum boreale Swartz. Craig Chailleach, Perth., July, 1899.
Messrs. NICHOLSON, SALMON & DIXON.

Bartramia Oederi Sm. Ben Lawers, Perth., 13 July, 1893.
H. N. DIXON.

B. Halleriana Hedw. Craig Mohr, Killin, July, 1899. W.
YOUNG.—Gorges de la Diosaz, Hte. Savoie, 23 Aug., 1899.—J.
STIRLING.

Breutelia arcuata Schp. c. frt. Ballachulish, Argylls., 15 July,
1898. C. BINSTED & H. N. DIXON. Camlough Mountain, Co.
Armagh, Oct., 1898. Sterile. C. H. WADDELL.

Philonotis Wilsoni Braithw. Cwm Bychan, near Harlech, N.
Wales, Sep., 1898. J. WHITEHEAD. Comm. T. Barker.

P. seriata Mitt ♂. Ben More, Assynt, Sutherland, 21 July, 1899.
Messrs. DIXON & NICHOLSON.

Webera nutans Hedw. A large form. Storeton Quarry, Cheshire,
2 March, 1898. J. A. WHELDON. "I have not seen this form of
a multiform plant. Not of course associated with *sphagnum*, yet
does not diverge much from var. *sphagnetorum*, of which I have no
specimens."—T. Barker. "I do not know var. *sphagnetorum*, nor
can I give this var. a name."—H. N. Dixon.

W. annotina Schwgr. Near Longridge, v.c. 60, Septr., 1899.
J. A. WHELDON. "Bulbils seem scarce. Those I saw were short,
green, with leafy points. They were not seen in situ. If so, not
proliger form, but I did not make out whether one or more in the
leaf axils."—T. Barker. "Yes, type (not *proliger*, nor *bulbifera*, nor
erecta)."—H. N. Dixon.

W. cucullata Schp. Ben Lawers, on earth, above Loch na Chat,
alt. 3,500ft., 27 July, 1899. Messrs. NICHOLSON, SALMON & DIXON.

W. albicans Schp. c. frt. Ben More, Perth., 21 July, 1897.
Messrs. BINSTED & DIXON.

——— var. *glacialis* Schp. Near summit of Craig Chailleach,
Perth., growing with *Splachnum vasculosum*, *Mnium inclidioides*,
&c., 24 July, 1897. H. N. DIXON.

Plagiobryum Zierii Lindb. Long Sleddale, Westmoreland, Aug., 1899. C. H. WADDELL.

Bryum filiforme Dicks. c. frt. Falls of Falloch, Perth., 28 July, 1897. H. M. DIXON.—Camlough Moun, Co. Armagh, Oct., 1898. C. H. WADDELL.

B. pendulum Schp. Wall, Castleton, Derbyshire, 9 Aug., 1899. H. N. DIXON.—St. Annes, W. Lancs., July, 1899. J. A. WHELDON.

B. Warneum Bland. Southport, S.W. Lancs., Sept., 1898. J. A. WHELDON. St. Annes, W. Lancs., July, 1899. J. A. WHELDON.

B. calophyllum R. Br. Southport, J. WHITEHEAD. Oct., 1866. Com. T. Barker.—Birkdale, v.c. 59, 28 May, 1899. "Sent to show the extension of its fruiting period."—J. A. Wheldon.

B. Marratii Wils. Coatham Marshes, N. Yorks., v.c. 62, Sep., 1898. W. INGHAM.

B. lacustre Brid. Southport, Oct., 1866. J. WHITEHEAD. Comm. T. Barker. "Still there 1900."—J. A. Wheldon.

B. pallens Sw. Helvellyn, July, 1897. E. B. BENSON. "Not typical; a var. not known to me. Has it a name?"—T. Barker. "I do not know any name for this var. I have gathered the same in clay pits near Northampton, and in even a more marked form."—H. N. Dixon.

B. Duvalii Voit. Bog near Bræmar, Aberdeensh., July, 1876. J. WHITEHEAD. Comm. T. Barker.—Springs on Coimremheall, Sutherlands., 21 July, 1899. Messrs. Dixon & W. E. Nicholson.

B. turbinatum Schwgr. Old gravel pit, Ashton-under-Lyne, June, 1865. J. WHITEHEAD. Com. T. Barker. "The pit is situated at Taunton, near Ashton."—J. A. WHELDON.

B. pseudo-triquetrum, var. *compactum* B. & S. ♂ & ♀. Hightown, v.c. 59, May and July, 1899. J. A. WHELDON.

B. intermedium Brid. Damp ground, Fulwood, W. Lancs., Dec., 1898. J. A. WHELDON. "Capsules when curving, seem to curve the wrong way (oftenest). Border more evident than accords with description, yet perhaps not wide enough for *B. affine*."—T. Barker. "I make this *B. intermedium*."—H. N. Dixon.

B. capillare, var. *macrocarpum* Hubn. Halton, W. Lancs., June, 1898. J. A. WHELDON.—Hedges at Pulverbach, Salop, June, 1898. R. de G. BENSON.

B. alpinum Huds. Helvellyn, July, 1897. E. B. BENSON.—Clougha, W. Lancs., June, 1899. J. W. WHEELER.—Craig Chail-leach, Perth., c. frt., 29 July, 1899. H. N. DIXON.

Mnium rostratum Schrad. Potter Fell, Westmoreland, Dec., 1886. C. H. WADDELL. "Is *M. punctatum*."—T. Barker.

M. orthorrhynchum B. & S. Limestone slopes, Braebay, Inchnamph, 24 July, 1899. Messrs. DIXON, SALMON & NICHOLSON.

M. riparium Mitt. Banks of stream near Cuckfield, Sussex, 8 Apr., 1899. W. E. NICHOLSON.

Mnium spinosum Schwgr. Ben Lawers, Perth., July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

M. stellare Reich. By stream, Potter fell, Westmoreland, Dec., 1885. C. H. WADDELL. "A slender form."—T. Barker.

M. cinclidioides Hiibn. Craig Chailleach, Perth., 29 July, 1899. Messrs. DIXON, SALMON & NICHOLSON.

Cinclidium stygium Sw. Inchnadamph, 24 July, 1899. Messrs. DIXON, SALMON & NICHOLSON.—Near Malham Tarn, W. Yorks., June, 1868. J. WHITEHEAD. Comm. T. Barker.

Fontinalis antipyretica L. Lyndhurst, Hamps., July, 1898. E. B. BENSON.

Neckera crispa var. *falcata* Boul. Chalk Downs, Lewes, Jan., 1900. W. E. NICHOLSON.

N. pumila Hedw. c. ft. Trees, Beckey Fall, Lustleigh, S. Devon., 17 July, 1894. H. N. DIXON.

Habrodon Notarisii Schp. Sycamore tree, Killin, Perth., v. c. 88. 7th Sept., 1899. J. STIRLING.—Killin, Aug., 1882. J. WHITEHEAD. Com. T. Barker.—Killin, July, 1899. W. YOUNG.

Anomodon viticulosus H. & T. Dalton Crag, W. Lancs. (60) June, 1899. J. A. WHELDON & A. WILSON.

Pterigynandrum filiforme Hedw. Boulder on path, near Chamonix, Hte. Savoie, 24 Aug., 1897. J. STIRLING.

Heterocladium heteropterum B. & S. Les Tines, nr. Chamonix, Hte. Savoie. c. frt. 31 Aug., 1897. J. STIRLING.—Near Botton, Hindburn, v. c. 60. Oct., 1899. J. A. WHELDON & A. WILSON.

Pseudoleskea catenulata B. & S. Penyghent, Yorks., June, 1878. J. WHITEHEAD. Com. T. Barker.—Limestone rocks, Breabay, Sutherlandsh. 24 July, 1899. Messrs. DIXON, SALMON and NICHOLSON. "Not type. I should like further opinion."—W. Ingham. "This is a slight departure from type, but very slight. It was growing with a very markedly aberrant form, still *sub judice*, and was to a certain extent connected by intermediate forms; but the present plant is to all intents and purposes, I think, typical."—H. N. Dixon.

Thuidium decipiens De Not. Craig Chailleach, Perth., 29 July, 1899. Messrs. DIXON, SALMON & NICHOLSON.

T. tamariscinum B. & S. c. frt. Saintfield, Co. Down. April, 1891. C. H. WADDELL.—c. frt. Torc Woods, Kerry, 14 Sep., 1897. H. W. LETT.

T. delicatulum Mitt. Near Inchnadamph, Sutherlandsh. July, 1899. Messrs. DIXON, NICHOLSON & SALMON.

T. recognitum Hedw. Sandy Links, Caithness, 12 Sep., 1899. D. LILLIE.—Mag. Limestone quarry, near Doncaster, Yorks. 7 March, 1900. W. INGHAM. "I make the Caithness plant *T. delicatulum*. In *T. recognitum* the stem leaves near apex have long points, often recurved when dry."—W. Ingham. "Mr. Lillie's plant is *T. delicatulum*, (shortly pointed, appressed stem leaves)." —H. N. Dixon.

Climacium dendroides W. & M. c. frt. Bog near Stirrup Wood, Ludworth. Derbysh.. (Glossop district,) Nov. 1862. E. CLOUGH. Comm. T. Barker.

Myurium Hebridarum Schp. Barra, Aug., 1899. P. EWING. Comm. W. Young.

Orthothecium rufescens B. & S. Glen Dubh, Inchnadamph. 18 July, 1899. Messrs, DIXON, SALMON & NICHOLSON.

O. intricatum B. & S. Ease Gill, near Leck. v. c. 60. W. Lancs. July, 1898. A. WILSON.

Isothecium myurum Brid. Ouldray Gill, N. Yorks. 2 Aug., 1888. c. frt. J. A. WHELDON.—Dalton Crag, W. Lancs. (60) June, 1899 c. frt. J. A. WHELDON & A. WILSON.

Brachythecium albicans B. & S. Sandhills, South shore, Blackpool. v. c. 60. Feby., 1899. J. A. WHELDON.

B. populeum B. & S. Budden Wood, Leicestershire. 26 Aug., 1899. A. B. JACKSON.

B. rivulare var. *chrysophyllum* Spruce. Sherbrook, Cannock Chase, Staffs. Aug., 1894. J. E. BAGNALL. (Who writes that this name is in error. It should be labelled var. *chrysoleucum* Spr.)

B. purum Dixon. c. frt. Great Doward, Herefordshire. Nov., 1891. F. ARMITAGE.

Hyoconomium flagellare B. & S. c. frt. By stream, Aber, N. Wales. 3 Jany., 1899. H. N. DIXON.

Eurynchium cirrosum Jur. Ben Lawers, Perth. Aug., 1882. J. WHITEHEAD. Comm. T. Barker.

E. abbreviatum Schpr. c. frt. Isfield, Dec., 1898, and Eridge, Sussex, 10 Mar., 1900. W. E. NICHOLSON.—Ross, Herefordshire, March. 1900. E. ARMITAGE.

E. rusciforme var. *atlanticum* Brid. Hindburn, W. Lancs. Oct., 1899. J. A. WHELDON & A. WILSON.

E. megapolitanum Milde Fairhaven, W. Lancs. (60) c. frt. 10 Nov., 1898. J. A. WHELDON

Plagiothecium undulatum B. & S. Allenheads, Northumberland. c. frt. 29 July, 1898. W. INGHAM.—Udale, W. Lancs., (60) c. frt. June. 1899. J. A. WHELDON & A. WILSON.

Amblystegium serpens var. *depauperatum* Boul. Between St. Annes and Southshore v. c. 60. 5 June, 1899. J. A. WHELDON. "The capsules. whilst mostly erect and straight, vary to curved and inclined." J. A. W.—Reisgill Burn, Caithness. 6 June, 1899. "This Caithness plant is undoubtedly *A. filicinum*. Note long stout nerve and alar cells."—W. Ingham. "All the packets of this gathering contain the two species mixed."—J. A. Wheldon. "*A. filicinum* var. *trichodes* and *A. serpens* var. *depauperatum*."—H. N. Dixon.

Amblystegium confervoides. Links at Bunrana, Lough Swilly, Feb. 1900. J. HUNTER. "Not *confervoides*. Perhaps *A. radiale*

var. *serotinum*?"—J. A. Wheldon. "*A. varium* Ldb. Nerve reaching apex nearly in well-developed leaves."—W. Ingham. "I think certainly *A. filicinum* var. *trichodes* form. The form of apex, distinct serrulate margin and basal cells decurrent are wanting in *A. varium*."—H. W. Dixon.

Amblystegium ———? Links at Buncrana, Feb., 1900. "Is *A. serpens* var. *depauperatum* Boul."—J. A. Wheldon. "A small form of *A. varium* Ldb. (Note long nerve in well-developed leaves)."—W. Ingham. "I make it *A. serpens* var. *depauperatum* Boul. There may of course be a few stems of another species mixed, but I found nothing with the nerve or areolation of *A. varium*."—H. N. Dixon. [A better series of specimens would be welcome next year to clear up these two questions.]

A. fluviatile B. & S. By the Wye, Cheedale, Derbysh., April, 1878. J. WHITEHEAD. Comm. T. Barker.—Rocks in river Mint, Meal Bank, Westmoreland, May, 1886. C. H. WADDELL.

A. filicinum var. *Whiteheadii* Wheld. Wet sandy shore. St. Annes, v.c. 60, June, 1899. J. A. WHELDON.

Hypnum riparium var. *longifolium* Schpr. c. frt. Healaugh, Yorks. (62). 16 Nov., 1899. W. INGHAM.

H. elodes Spr. Hawes Water near Silverdale, W. Lancs. (60). April, 1899. A. WILSON.—St. Annes, W. Lancs., March, 1898. J. A. WHELDON.

H. polygamum Schpr. c. frt. St. Annes and Fairhaven, W. Lancs. (60). June, 1898. J. A. WHELDON.

——— var. *stagnatum* Wils. Southport, S. Lancs. (59), June 1899. J. A. WHELDON.

H. stellatum Schreb. c. frt. Lower Rumster, Latheron, Caithness, 7 June, 1899. D. LILLIE.—Aonach Mor, Glen Spean, Inverness, c. frt. 13 July, 1898. H. N. DIXON.—Southport, (59), May, 1898, where it often grows intimately mixed with tufts of *H. polygamum* v. *stagnatum*. J. A. WHELDON.

——— var. *protensum* B. & S. c. frt. Wet calcareous rocks, Tyndrum, Perthsh., 26 July, 1898. H. N. DIXON.

H. chrysophyllum var. *erectum* Bagn. Dove Dale, Staffs., 2 Sept., 1899. J. E. BAGNALL.

H. aduncum var. *gracilescens* Schpr. Marshy ground near Lewes Waterworks, Mar., 1900. W. E. NICHOLSON.

——— (*pseudo-fluitans* Ren.) Church Fenton v.c. 64. 10 June, 1899. A form between var. *paternum* and var. *flexile*. W. INGHAM.

——— (*pseudo-fluitans* Ren.) var. *paternum* Sanio. (teste Renauld and Dixon). St. Annes, W. Lancs. (60), 6 May, 1899. J. A. WHELDON.—Marl pit pools, Pulverbach, Salop, Aug., 1898. R. de G. BENSON. "Undoubtedly *paternum*, but ill developed."—J. A. W. "Too weak for *paternum*, nearer var. *flexile* Ren."—W. Ingham. "A poor form of var. *paternum*, I think. About the same as one Renauld named for me *forma debilis*."—H. W. Dixon.

Hypnum aduncum (Kneiffii) var. *intermedium*, forma *laxifolia* Sanio. (teste Renauld). Walton, S. Lancs. (59). 5 Jan., 1899. J. A. WHELDON. "I gathered exactly the same moss at Naburn, Nov. 4, 1899. On revisiting the place Apr. 20, 1900. I found the lax leaved stems had developed into type. Therefore I think forma *laxifolia* of no consequence."—W. Ingham. "This does not merge into the ordinary form here always, even when a little more robust, having lax leaves; but, as Mr. Ingham suggests, it is a mere state."—J. A. Wheldon.

H. Wilsoni var. *hamatum* Ldb. (teste Renauld). St. Annes, W. Lancs (60), July, 1898, and Southport (59), May, 1898.—J. A. WHELDON.

H. lycopodioides Schwgr. St. Annes, W. Lancs. (60), March, 1898.—J. A. WHELDON.

H. fluitans var. *Arnellii* Sanio. (teste Braithwaite) Skipwith Common. v.c. 6r. 19th July, 1898. W. INGHAM.

—— var. *gracile* Boul. Longridge Fell, W. Lancs., 12 Apr., 1900. J. A. WHELDON. "After careful examination and comparison, I make this *Hyp. riparium* L. The alar cells are wanting, the nerve is short, the cells are too short and wide for *H. fluitans*, and although there is a suspicion of slight toothing at the apex, the margin is entire. The leaves certainly are not so spreading as usual, and are inclined to be secund and falcate, but otherwise I call it good '*riparium*'."—W. Ingham. "Some forms of *H. fluitans* (notably group *obsoletum*) have wider cells and short nerve. *H. riparium* is exceedingly rare or unknown on our elevated fell lands. The specimens are from near the place where I gathered var. *gracile* named by Renauld, but may not be the same. This form is frequent on nearly all the W. Lancs. fells."—J. A. Wheldon. "Certainly *H. fluitans*. I should be a little doubtful of the var. *gracile*; the only specimen I have of that does not look quite the same; Renauld too says the leaves of that var. are strongly toothed in acumen. I should have thought it an 'allotropic' form of the 'group *obsoletum*' plant from that locality."—H. N. Dixon. "Mons. Renauld refers this to var. *gracile* Boul. There is a very slight admixture of the *obsoletum* form mentioned by Mr. Dixon, probably added accidentally, during the drying process. This form of *fluitans* occurs from the sea level in Lancashire to over 2000 ft. in W. Yorkshire (Ingleboro)."—J. A. W.

H. exannulatum var. near *stenophyllum*, but with fewer pinnæ, broader leaves, shorter nerve not entering acumen, and entire piliform leaf apices. Southport, June, 1898. J. A. WHELDON. "This to my mind is undoubtedly *H. aduncum* Hedw., and I should like Mr. Dixon to see it."—W. Ingham. "After careful examination I think Mr. Ingham's view is the right one. The narrower, shorter nerve, practically entire leaves, and broader leaf base, are points which incline towards *H. aduncum*, but in addition to these there is a certain appearance characteristic of the basal cells of all

the *exannulatum* group, difficult to describe, but absent here. The leaf base in all the *fluitans* group too is more truncate, the line of insertion straighter, so that the leaves at the auricles are generally about as wide as just above; in *aduncum* they narrow to the semi-circular line of insertion, so that the auricles are brought near together. That this holds good to a great extent is I think evidenced by a comparison of the various figures given by Renauld (Husnot, Museol, Gall.) for the two species. I should say *H. aduncum*, between var. *intermedium* and *pseudo-fluitans*, nearer the latter."—H. N. Dixon. "*H. aduncum (pseudo-fluitans)*."—F. Renauld.

—— v. *falcifolium*. Near *f. viridis* Boul. (teste Dixon.) Southport. May, '98. J. A. WHELDON. "Mr. Ingham thinks this is *H. aduncum* var. *gracilescens*. When Mr. Dixon named this he did so with an expression of doubt which unfortunately I overlooked, and hence the packets were not marked ?, as they should have been. Mr. Dixon suggests as a possible name *H. sendtneri* (? *f. gracilescens* Sno.) I am submitting specimens to M. Renauld, and now ask members to place a query on their specimens until his determination is announced"—J. A. Wheldon. "*H. aduncum (pseudo-fluitans)*."—F. Renauld.

——var. *brachydietyon* Rcn. (teste Renauld) Near Aintree, S Lancs. Sep., 1898. J. A. WHELDON. "Yes."—W. Ingham.

H. commutatum Hedw. c. frt. Craig Cillie, Brecknockshire, June, 1899. C. H. BINSTED & E. ARMITAGE.

H. sulcatum Schpr. Ben Lawers. 27 July, 1899. Messrs. DIXON SALMON & NICHOLSON.

H. cupressiforme var. *ericetorum* B. & S. Stiperstones Hill, Salop. R. DE G. BENSON.

H. ——— ? Watten, Caithness. 9 June, 1899. Rev. D. LILLIE. "I think this is *Hypnum molle* var. *Schimperianum* Schp., but as I have never seen specimens I should like it to be referred to Mr. Dixon."—W. Ingham. "Mr. Bagnall considers the Limnobium to be *H. palustre*, which is what I thought it, so I think the name may be accepted. It is an unusual form, however."—H. N. Dixon.

H. ochraceum Wils. Loughnalacken, Brandon, Kerry. 19 Apl., 1899. H. W. LETT.—In Shimna river, Tollymore Park, Co. Down, Sep., 1895. C. H. WADDELL.

H. scorpioides L. Benson Knot, Westmoreland. Sep., 1886. C. H. WADDELL.—Between Lairg and Altnaharra, Sutherland. 6 July, 1899. c. frt. H. N. DIXON.

Hypnum giganteum Schp. Beamsley Moor, Ilkley, Yorks. Mar., 1900. A. WILSON.

H. sarmentosum Wahl. Coomanard Loughs, Corcaguiny, Kerry, 16 June, 1898. H. W. LETT.—Marshes, Slieve Donard, Co. Down. July, 1892. C. H. WADDELL.—Glas Rheim, Inchnadamph, Sutherland, c. frt. 22 July, 1899. Messrs. NICHOLSON, SALMON and DIXON.

Pylocomium pyreniacum Ldb. Ben Lawers, Perth. Aug., 1882.
J. WHITEHEAD. Comm. T. Barker.

H. brevirostrum B. & S. c. frt. Torc Woods, Killarney, Kerry.
24 Apl., 1899. H. W. LETT.

HEPATICÆ.

Frullania Tamarisci (L.) ♂ & ♀ Torc Woods, Kerry. 24 Apr.,
'99. H. W. LETT.

F. fragilifolia Tayl. Moidart, W. Inverness. 3 Mar., 1900.
S. M. MACVICAR.

F. germana Tayl. Corcaguiny. 18 Apr., '99. H. W. LETT.
"Is *F. Tamarisci* (L)."—S. M. M. — Moidart, West Inverness,
12 Mar., 1900. S. M. MACVICAR.

F. dilatata (L.) Ravensdale, Louth. H. W. LETT. 5 Oct., '98.

Jubula Hutchinsiae (Hook.) Torc Waterfall, Kerry, 4 Sep., '97,
and Altadore Glen, Co. Wicklow. 26 Aug., 1893. H. W. LETT.

Isoetes hamatifolia (Hook.) with *L. ovata* Tayl. Corcaguiny,
Kerry. 15 June, '98. H. W. LETT.

L. Mackaii (Hook.) Muckross Demesne, on *Taxus baccata*
stems, Kerry. 28 Apr., '99. H. W. LETT.

L. serpyllifolia (Dicks.) Muckross Demesne, Kerry, 28 Apr., '99.
H. W. LETT.

Radula Carringtonii Jack. Loughnascawl, Corcaguiny, Kerry.
15 June, 1898. H. W. LETT.

R. voluta Tayl. Torc Waterfall, Kerry, Sep., 1897. H. W. LETT.

R. complanata (L.) Ross Island, Kerry. 23 April, '99. H. W. LETT.

Porella platyphylla (L.) Drumraymond Wood, Toome, Antrim.
4 July, 1899. H. W. LETT. "Is *P. rivularis* Nees. It can
readily be known by its longly decurrent postical lobe."—S. M. M.

P. laevigata Schrad. Torc Waterfall, Kerry. 24 Apr., '99.
H. W. LETT.

Pleurozia cochleariformis (Weiss.) Glen on east side, Brandon,
Kerry. 17 Sep., '97. H. W. LETT. — Moidart, W. Inverness.
3 March, 1900. S. M. MACVICAR.

Anthelia julacea (Lightst.) Slieve Donard, Co. Down. 3 Aug.,
'99. H. W. LETT.

Herberta adunca (Dicks.) Loughnalacka, Brandon, Kerry, 19
April, '99. H. W. LETT.

Mastigophora Woodsii (Hook.) Nees. Quinag, nr. Inchnadamph,
Sutherland. July, '99. E. S. SALMON (with H. N. DIXON and
W. E. NICHOLSON).

Trichocolea tomentella (Ehrh.) UMBERLEY Brook, Chatsworth.
Derbs. 25 July, '99. W. R. LINTON.

Lepidozia cypressina (Sw.) Brit rocks, Clougha, W. Lancs. 10 Jan., 1900. J. A. WHELDON. (First found there by G. Stabler.)
—Lough Eagle, Corcaguiny, Kerry. 17 June, '98. H. W. LETT.

L. reptans (L.) Woods, Saintfield, Co. Down. Apr., '97. C. H. WADDELL.—Brandon, Kerry. 17 Sep., '97. H. W. LETT.

L. setacea (Web.) Brandon, Kerry. 17 Sep., '97. H. W. LETT.

Bazzania trilobata (L.) Clougha, W. Lancs. June and January, 1899. J. A. WHELDON.—Cromagloun, Kerry. 25 Apl., '99. H. W. LETT.

B. triangularis (Schleich.) Lindb. Loughnalacker, Brandon, Kerry. 19 April, 1899. H. W. LETT.

Kantia trichomanis (L.) Glen Dun, Antrim, Apl., '99. H. W. LETT.

K. arguta (Mart.) Lough Eagle, Corcaguiny, Kerry, 19 June, '98. H. W. LETT.

Cephalozia Lammersiana (Hiiben)? Froggat, Derbs. 16 Aug., '99. W. R. LINTON. "Material insufficient. Good specimens of this genus are necessary, in order that the inflorescence may be determined."—S. M. Macvicar.

C. Sphagni (Dicks.) Holymoorside, &c., Derbs. 3 Aug., '99. W. R. LINTON. "These, from five different localities, are immature plants, and good specimens of these round-leaved *Jungermannia* are necessary for their certain identification. Some at least of these belong to *Jungermannia* and not to *Cephalozia*."—S. M. Macvicar.

Hygrobiella laxifolia (Hook.) Moidart, W. Inverness, 21 Oct., '99. S. M. MACVICAR.

Scapania compacta (Ldb.) Haughmond Hill, Salop. 26 Dec., '99. W. P. HAMILTON.

S. resupinata (Dill.) Carlingford Mtn., Louth. 13 Sep., '99.—Derrymore River Glen. 22 Apl., '99, and Brandon, Kerry. 17 Sep., '97. H. W. LETT.

S. æquiloba (Schwg.) Hells Fell, nr. Kendal, Westmoreland, 23 Aug., '99. H. W. LETT. "I can only see *Nardia scalaris* and *Diplophyllum albicans*."—S. M. M.

S. nemorosa (L.) Mourne Mtns., Down. 29 June, '99. H. W. LETT. "I should not call this *nemorosa*." S. M. Macvicar.

S. undulata (L.) Lower Lough Bray, Wicklow. 27 June, '98. H. W. LETT.

S. purpurea Carr. Loughanscaul, Kerry. 15 June, '98. H. W. LETT.

S. irrigua (Nees.) Hulland Moss, Derbs. 13 May, '99. W. R. LINTON.—Hawkesyard, Staffs. 1899. H. P. READER.

Lophocolea bidentata (L.) Cargin Wood, Armagh. 27 Apl. '98. H. W. LETT. "I do not see any inflorescence, so cannot say whether *bidentata* or *cuspidata*. Perhaps Mr. Lett saw inflorescence."—S. M. Macvicar.

L. heterophyllu (Schrad.) Brereton. Staffs. 1899. H. P. READER.

Chiloscyphus polyanthos (L.) Loughnalacker and Coomanard Loughs, Kerry. 16 June, '98. H. W. LETT.

C. pallescens Nees. Ditch on peaty soil, Pilling, W. Lancs., 1898. J. A. WHELDON. "I hardly think this is the right plant. It is however only a variety of *polyanthos*."—S. M. M. "Similar plants were so named by Mr. Slater for me."—J. A. W.

Mylia Taylori (Hook) Clougha, W. Lancs. June, '99. J. A. WHELDON & ALBERT WILSON.—Lough Eagle, Corcaguiny, Kerry. 17 June, '98. H. W. LETT.

M. anomala (Hook.) Near Hayfield, Derby. 14 July, '98. W. R. LINTON. "Is probably *Jung. cordifolia*, but the material is insufficient. Good material is necessary for these round-leaved species."—S. M. M.

Plagiochila asplenioides (L.) var. *major*. Carr. Male plants. Moidart, W. Inverness. 3 Mar., 1900. S. M. MACVICAR.

P. spinulosa (Dicks.) Mucross Demesne, Kerry. 28 Apl., '99. H. W. LETT.

P. punctata (Tayl.) Moidart, W. Inverness. 3 Mar., 1900. S. M. MACVICAR.

Jungermannia cordifolia Hook. Combes Moss, Derbs. 8 July, '98. W. R. LINTON.—Jarvis Clough, nr. Ashopton, Derbs. 12 Aug. '98. W. R. LINTON. "These are both *J. sphaerocarpa*."—S. M. M.

J. Floerkii W. & M. Combes Moss and six other localities in Derbyshire. 8 July, '98. W. R. LINTON.

J. barbata Schmid. Golden River, Carlingsford Mtn., Louth, 13 Sep. '99. "Is *J. Lyoni* Tayl."—S. M. M.

J. gracilis Schleich. Udale, W. Lancs. Oct., '99. J. A. WHELDON & A. WILSON.—Armitage, Staffs. Oct., '99. H. P. READER "Mr. Reader's specimens are *Lophocolea heterophylla*, off-type form; inflorescence paroicous.—S. M. M.

J. ventricosa Dicks. East Watten Moss, Caithness. 3 Aug., '99. D. LILLIE. "Is *Jung. incisa* Schrad."—S. M. M.

J. bantriensis Hook. var. *acuta* Ldb. Brassington Rocks, Derby. 29 Mar., 1900. W. R. LINTON. "I should call this var. *Mulleri*."—S. M. M.—Lower & Upper Lough Bray, Wicklow. 29 June, '98. H. W. LETT. "Should come under var. *porphyroleuca* I think; leaves nearly flat and light coloured!" S. M. M.

Nardia compressa (Hook.) Mourne Mtns., Down. 3 Aug., 1899. H. W. LETT & C. H. WADDELL.

N. scalaris (Schrad.) Connor Hill, Kerry. 16 Sep., '99. H. W. LETT.

Marsupella emarginata Ehrh. Torc Waterfall, Kerry. 14 Sep., '97, and Lower Lough Bray, Wicklow. 27 June, '98. H. W. LERT.

Acolea concinnata (Lightf.) Golden River, Louth. 13 Sep., '99. H. W. LERT. "Is *A. crenulata* Gottsche."—S. M. M.

A. crenulata (Gottsche.) Moidart, W. Inverness, 27 June, '99. S. M. MACVICAR.

A. obtusa (Ldb.) Moidart, W. Inverness, 7 Dec., '99. S. M. MACVICAR.

Fossombronia pusilla (L.) By the Foss, York. v. c. 62. 30 Sep., '99. W. INGHAM. The two packets submitted to Mr. Macvicar contained only *F. cristata*. Mr. Macvicar states that the two species often grow together, and as Mr. Ingham found *F. pusilla* in this locality last year, this may be a mixed gathering, and members before correcting the label should check their specimens.

F. cristata Ldb. Paths in wood, Armitage, Staffs. Oct., '99. H. P. READER.

Mörckia hibernica Hook. Coatham Marshes, N. Yorks., 30 Aug., '99. W. INGHAM. (teste Pearson and Slater).

Blasia pusilla (L.) The Glebe, Watten, Caithness, Feb., 1900. D. LILLIE.

Aneura simata Dicks Waterfall, Froggatt, Derbs. 28 July, '99. W. R. LINTON. "Without inflorescence, but looks correct." S. M. M.

A. pinguis (L.) Udale, W. Lancs., June, 1889. J. A. WHELDON and A. WILSON.

Metzgeria conjugata Ldb. Thrang End, W. Lancs., July, 1898. J. A. WHELDON. — Ease Gill, W. Lancs., June, 1899. J. A. WHELDON & A. WILSON.

Targionia hypophylla (L.) Dovedale. Derby, 7 Mar. 1900. W. R. LINTON.

